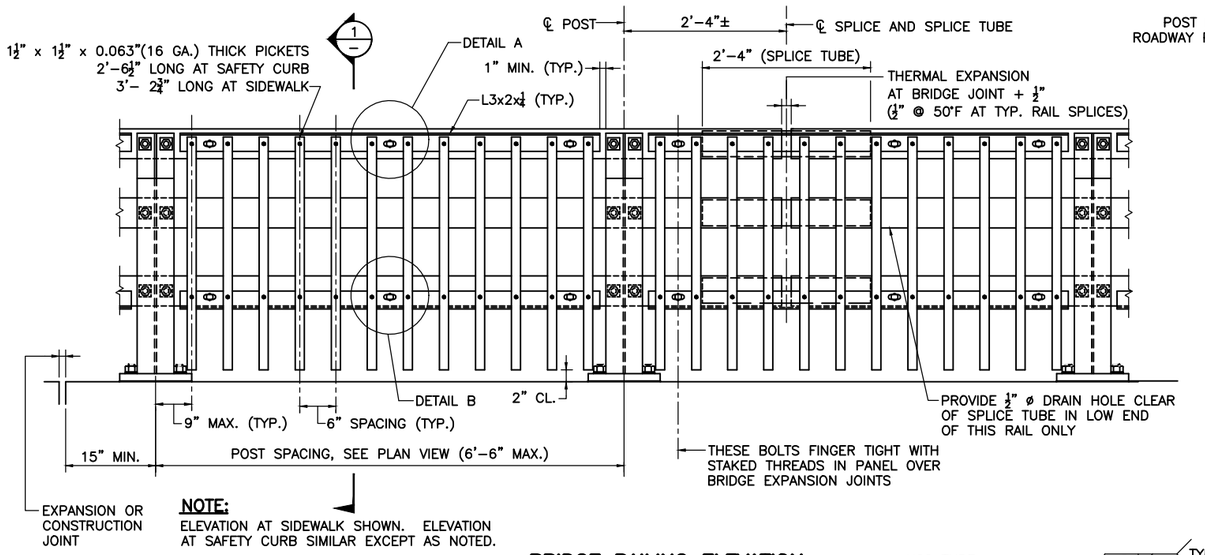
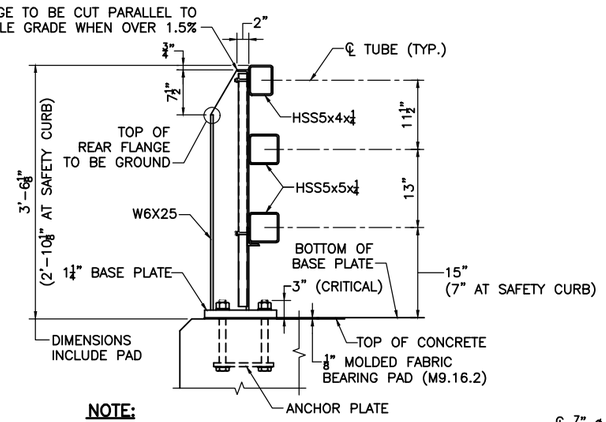



**NOTE:**
ELEVATION AT SIDEWALK SHOWN. ELEVATION AT SAFETY CURB SIMILAR EXCEPT AS NOTED.

## BRIDGE RAILING ELEVATION
SCALE: 1" = 1'-0"

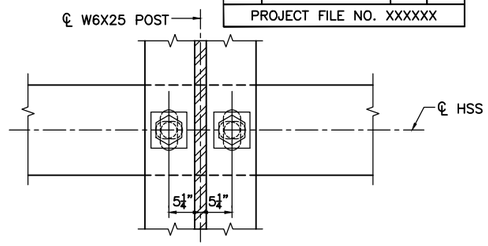



**NOTE:**
SECTION AT SIDEWALK SHOWN. SECTION AT SAFETY CURB SIMILAR, EXCEPT AS NOTED.

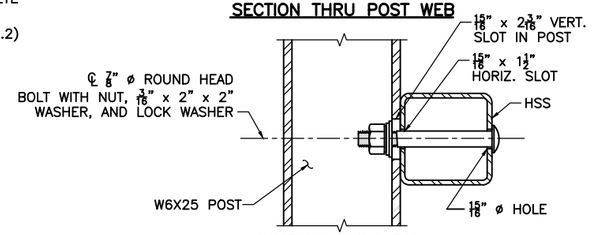
## SECTION 1
SCALE: 1" = 1'-0"

CITY/TOWN
STREET/ROUTE # OR NAME

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |



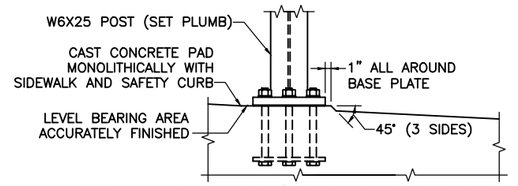

## SECTION THRU POST WEB



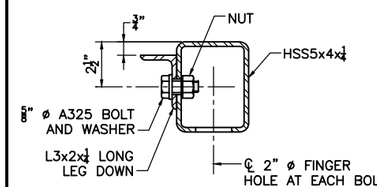

## SECTION THRU RAIL

**NOTE:**
CONNECTIONS AT LOWER RAILS SHOWN.
CONNECTIONS AT TOP RAIL SIMILAR.

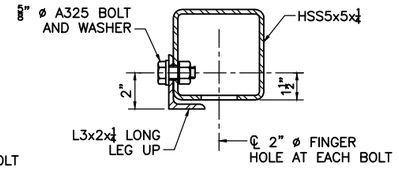
## TYPICAL RAIL TO POST CONNECTIONS
SCALE: 1" = 1'-0"



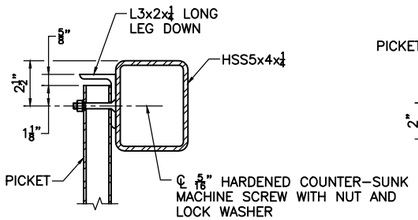

## SETTING OF POSTS (PROFILE GRADE OVER 1.5%)
SCALE: 1" = 1'-0"



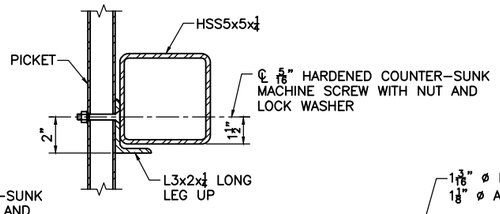

## SECTION 2



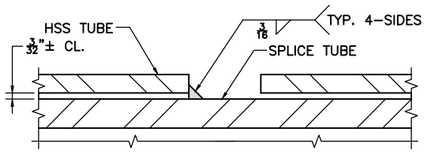

## SECTION 4



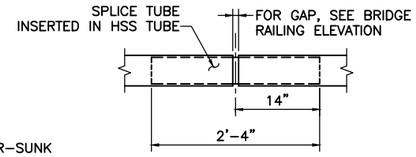

## SECTION 3



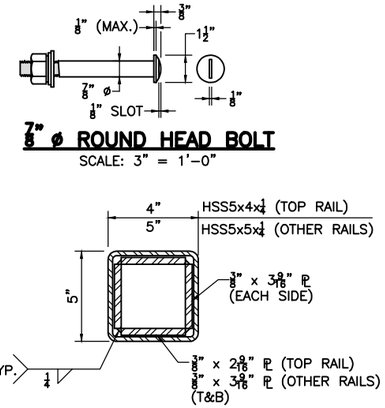

## SECTION 5



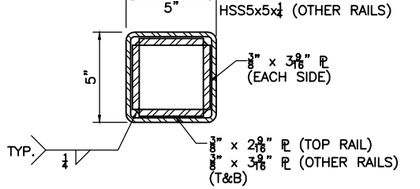

## SPLICE DETAIL
FULL SIZE



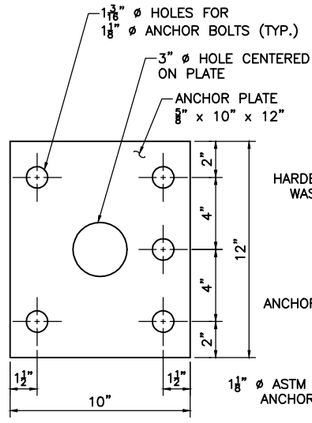

## TYPICAL SPLICE
SCALE: 1" = 1'-0"



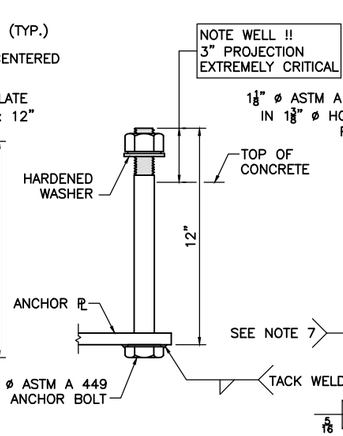

## 7/8" ø ROUND HEAD BOLT
SCALE: 3" = 1'-0"



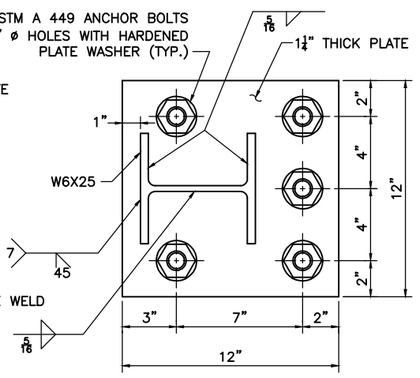

## SPLICE TUBE DETIALS
SCALE: 3" = 1'-0"



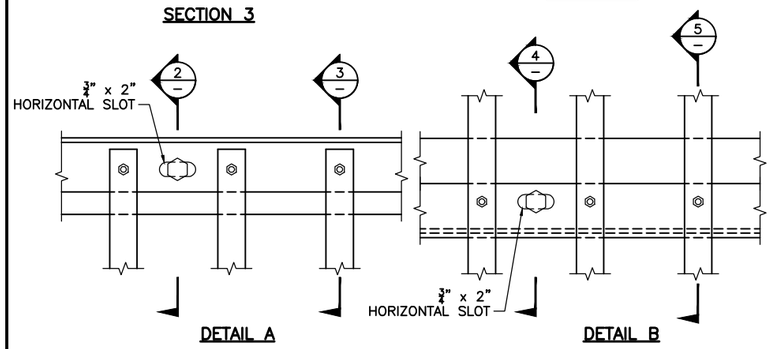

## ANCHOR PLATE
SCALE: 3" = 1'-0"




## ANCHOR BOLT
SCALE: 3" = 1'-0"




## BASE PLATE
SCALE: 3" = 1'-0"




## DETAIL A
## DETAIL B

## TYPICAL PICKET TO RAIL DETAILS
SCALE: 3" = 1'-0"

## RAILING NOTES:

1. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500 WITH A CERTIFIED Fy = 50 KSI MINIMUM. THE MINIMUM HORIZONTAL BENDING RADII OF THE HSS TUBING SHALL BE 8 FEET. PICKET CARRIER ANGLES, ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 36. PICKET TUBING SHALL CONFORM TO ASTM A 513 WITH Fy = 36 KSI MIN. OR A 500 GRADE B.
2. ALL STEEL (EXCEPT THE ⅝" ANCHOR PLATE AND FASTENERS) SHALL BE GALVANIZED AND PAINTED DARK BRONZE (FEDERAL STD. 595B COLOR NO. 10045). ANCHOR PLATE SHALL BE GALVANIZED ONLY. HEADS OF ⅞" ø ROUND HEAD BOLTS SHALL BE PAINTED TO MATCH RAIL.
3. ANCHOR BOLTS SHALL BE SET WITH TEMPLATES. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN AFTER STEEL IS IN PLACE.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR (4) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN THE PANELS OVER EXPANSION JOINT.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. ALL POSTS TO BE PLUMB WHEN PROFILE GRADE EXCEEDS 1.5%. FOR PROFILE GRADES LESS THAN 1.5%, POSTS SHALL BE SET PERPENDICULAR TO GRADE.
7. POST FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING. WELD SHALL BE BACK-GOUGED ON BACK SIDE EXCEPT AT WEB. WELD IS THE SAME ON BOTH FLANGES.
8. ⅞" ø ROUND HEAD BOLTS SHALL CONFORM TO THE CHEMICAL AND PHYSICAL REQUIREMENTS OF AASHTO M 164.

| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

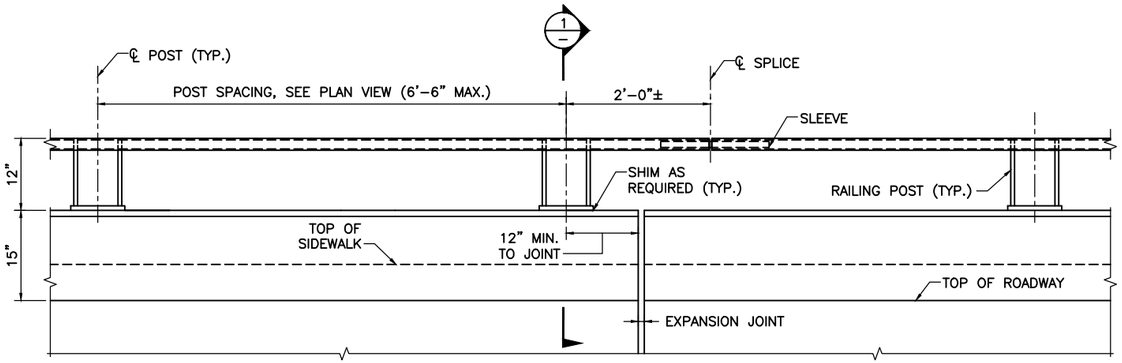
# S3-TL4 BRIDGE RAILING

**SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)**

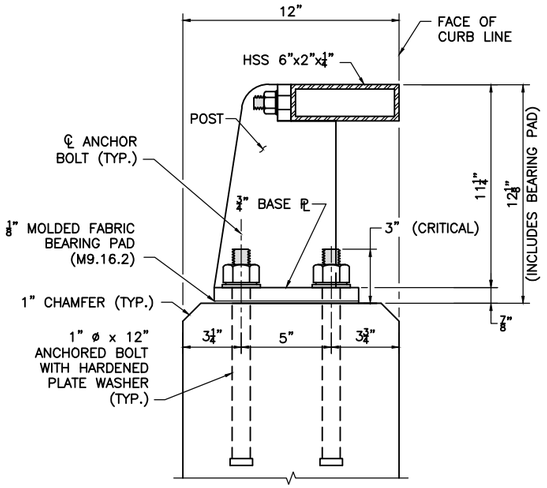
**Date: June 2013**

S3-TL4 BRIDGE RAILING.DWG 11-Mar-2014

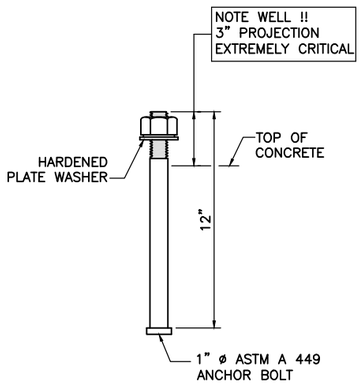
Xxxxxx Structural Submittal (S#) DD-Month-YYYY




**ELEVATION**
SCALE: 1" = 1'–0"



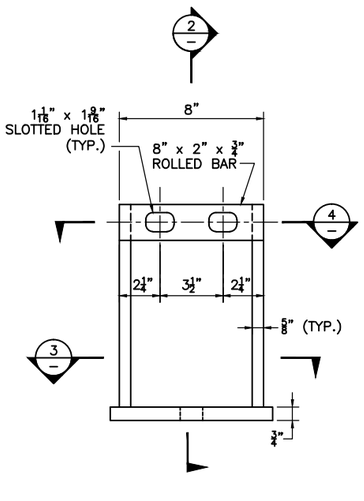

**SECTION 1**
SCALE: 3" – 1'–0"



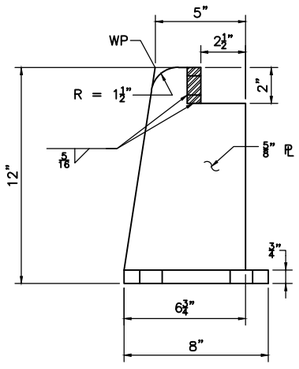

**ANCHOR BOLT**
SCALE: 3" – 1'–0"

CITY/TOWN
STREET/ROUTE # OR NAME

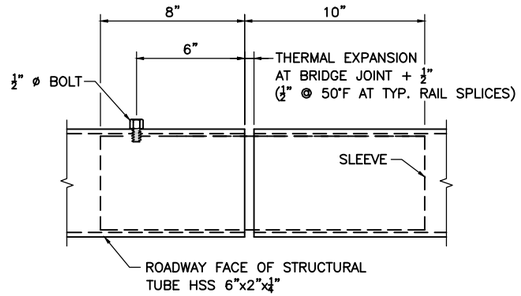
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |



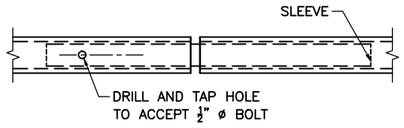

**ELEVATION**



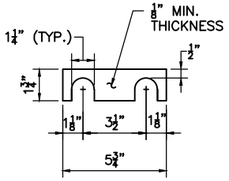

**SECTION 2**



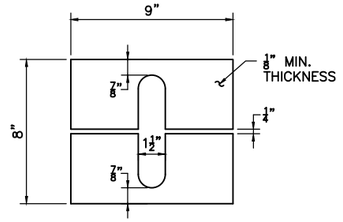

**PLAN**




**REAR ELEVATION**

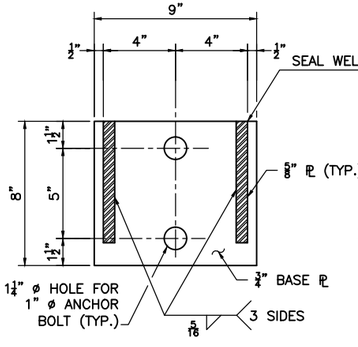



**RAILING SHIM DETAIL**
SCALE: 3" – 1'–0"

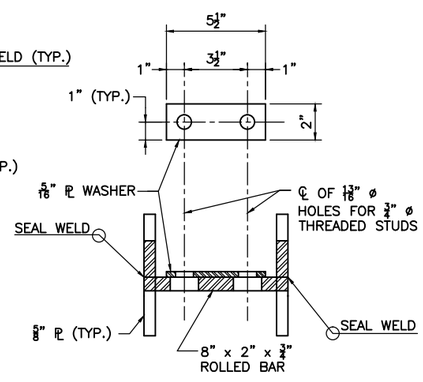



**NOTE:**
BEVEL SHIM AS REQUIRED TO ENSURE POSTS ARE ERECTED PLUMB.

**POST SHIM DETAIL**
SCALE: 3" – 1'–0"

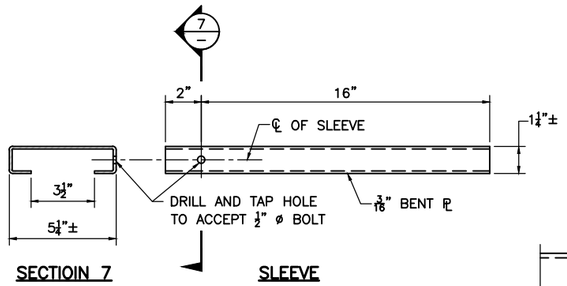



**SECTION 3**



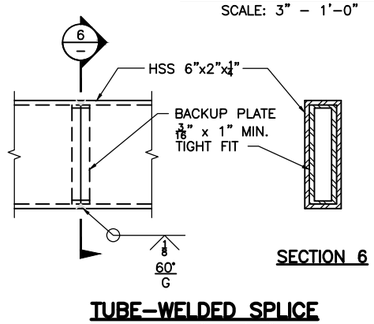

**SECTION 4**

**RAIL POST DETAILS**
SCALE: 3" – 1'–0"



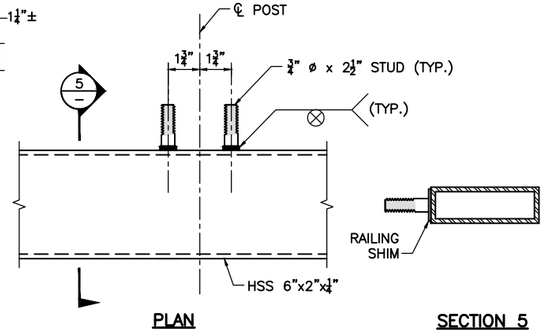

**SECTIOIN 7** **SLEEVE**

**TYPICAL SPLICE DETAILS**
SCALE: 3" – 1'–0"




**SECTION 6**

**TUBE–WELDED SPLICE**
SCALE: 3" – 1'–0"




**PLAN** **SECTION 5**

**STUD DETAIL**
SCALE: 3" – 1'–0"

**FINISH:**

POSTS, RAILS, BASE PLATES, AND SPLICE TUBES SHALL RECEIVE XXXXXX FINISH.

**MATERIALS:**

| | |
|---|---|
| STRUCTURAL STEEL TUBING | ASTM A 500 GRADE B GALVANIZED |
| POST AND BASE PLATE | AASHTO M 270 GRADE 36 GALVANIZED |
| ANCHOR BOLTS | ASTM A 449 GALVANIZED |
| NUTS, BOLTS, AND WASHER | ASTM A 325 GALVANIZED |
| STUD | ASTM A 108 |

**GENERAL NOTES:**

1. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR POSTS, IF POSSIBLE. IF NEEDED, HSS 6"X2"X¼" RAILS MAY BE CONNECTED IN THE SHOP BY USING THE TUBE–WELDED SPLICES, AS SHOWN IN THE PROVIDED DETAIL.
2. RAILS SHALL HAVE A TUBE SPLICE IN THE PANEL OVER A BRIDGE EXPANSION JOINT.
3. ANCHOR BOLTS SHALL BE SET WITH TEMPLATES. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN AFTER STEEL IS IN PLACE.
4. ALL POSTS TO BE PLUMB WHEN PROFILE GRADE EXCEEDS 1.5%. FOR PROFILE GRADES LESS THAN 1.5%, POSTS SHALL BE SET PERPENDICULAR TO GRADE.
5. WELDING SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AASHTO/AWS D.1.5, EXCEPT THAT WELDING OF THE TUBE–WELDED SPLICE SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWS D.1.1.

| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

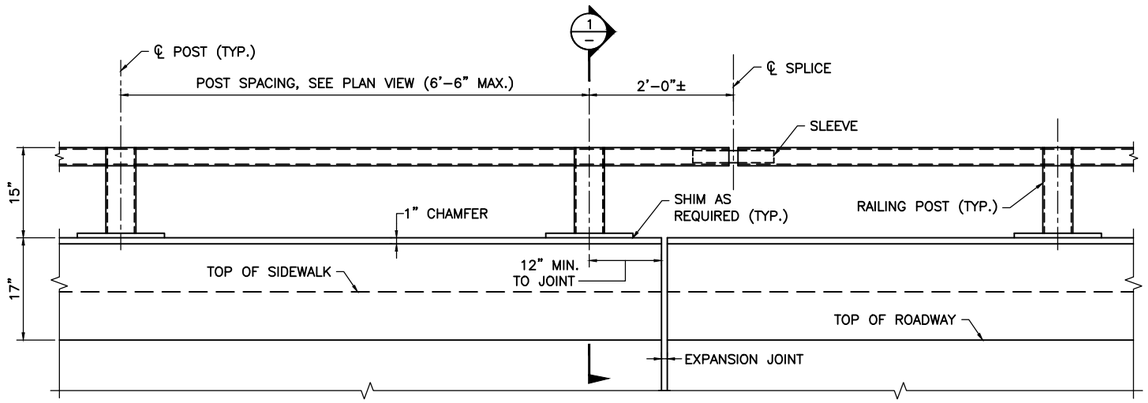
# BR–2 BRIDGE RAILING

**SHEET XX OF XX SHEETS BRIDGE NO. X–XX–XXX (XXX)**

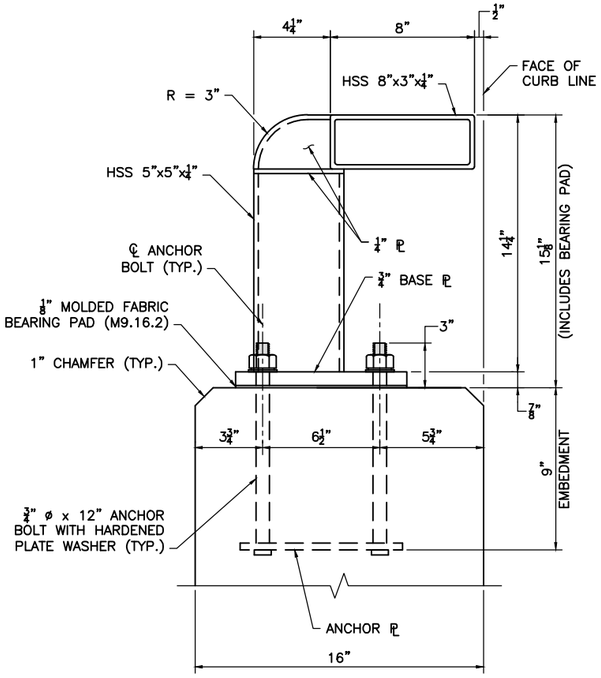
**Date: June 2013**

BR-2 BRIDGE RAILING.DWG 11-Mar-2014

Xxxxxx Structural Submittal (Sil) DD-Month-YYYY



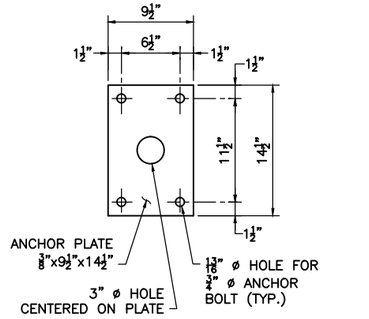

## ELEVATION
SCALE: 1" – 1'-0"



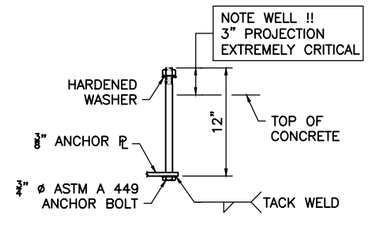

## SECTION 1
SCALE: 3" = 1'-0"

CITY/TOWN
STREET/ROUTE # OR NAME

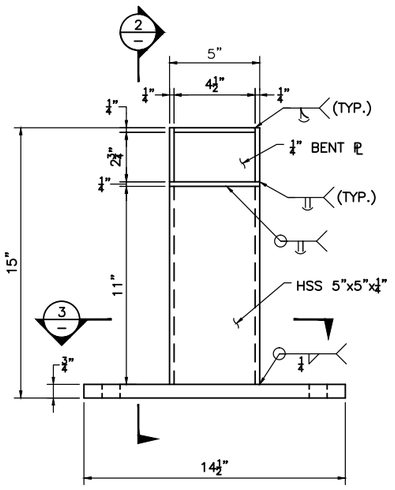
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | X | X |
| PROJECT FILE NO. XXXXXX | | | |



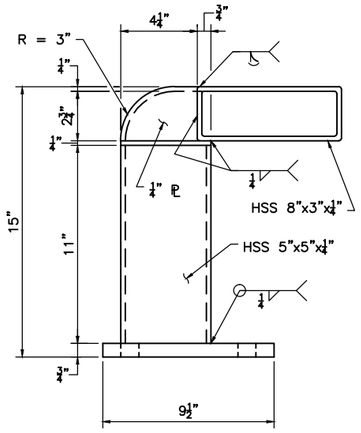

## ANCHOR PLATE
SCALE 1½" = 1'-0"



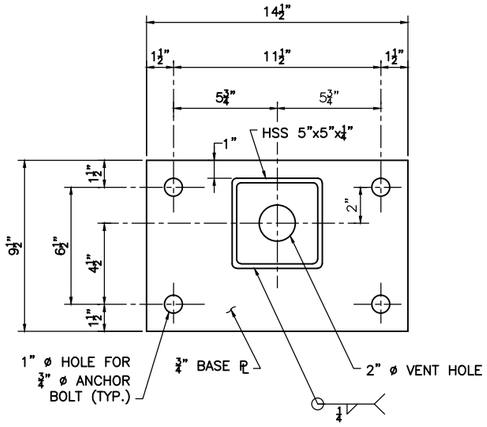

## ANCHOR BOLT
SCALE 1½" = 1'-0"



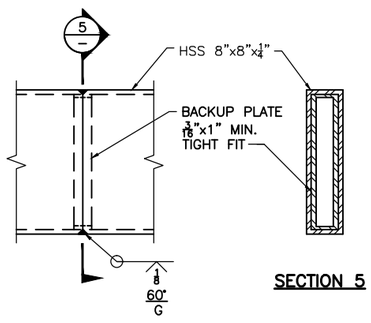

## ELEVATION




## SECTION 2

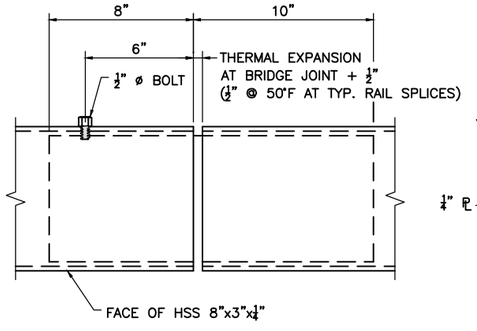



## SECTION 3

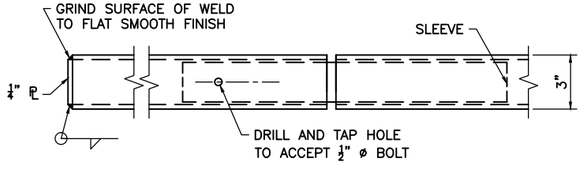



## SECTION 5

## RAIL POST DETAILS
SCALE: 3" = 1'-0"



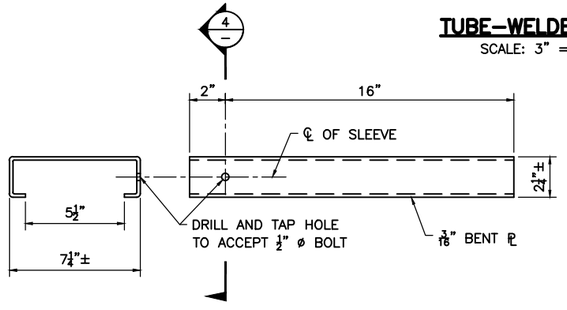

## PLAN




## RAIL CAP

## REAR ELEVATION

## TUBE-WELDED SPLICE
SCALE: 3" = 1'-0"




## SECTION 4

## SLEEVE

## TYPICAL SPLICE DETAILS
SCALE: 3" = 1'-0"

## FINISH:

POST RAILS, BASE PLATES, AND SPLICE TUBES SHALL RECEIVE XXXXX FINISH.

## MATERIALS:

| | |
|---|---|
| STRUCTURAL STEEL TUBING | ASTM A 500 GARDE B GALVANIZED |
| POST AND BASE PLATE | AASHTO M 270 GRADE 36 GALVANIZED |
| ANCHOR BOLTS | ASTM A 449 GALVAINIZED |
| NUTS, BOLTS, AND WASHER | ASTM A 325 GALVANIZED |

## GENERAL NOTES:

1. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR POSTS, IF POSSIBLE. IF NEED, HSS 8"x3"x¼" RAILS MAY BE CONNECTED IN THE SHOP BY USING TUBE-WELDED SPLICES, AS SHOWN IN THE PROVIDED DETAILS.
2. RAILS SHALL HAVE A TUBE SPLICE IN THE PANEL OVER A BRIDGE EXPANSION JOINT.
3. ANCHOR BOLTS SHALL BE SET WITH TEMPLATES. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN A ADDITIONAL ⅛ TURN AFTER STEEL IS IN PLACE.
4. ALL POSTS TO PLUMB WHEN PROFILE GRADE EXCEEDS 1.5%. FOR PROFILE GRADES LESS THAN 1.5%. POSTS SHALL BE SET PERPENDICULAR TO GRADE.
5. WELDING SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AASHTO/AWS D.1.5, EXCEPT THAT WELDING OF THE TUBE-WELDED SPLICE SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWS D.1.1

| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

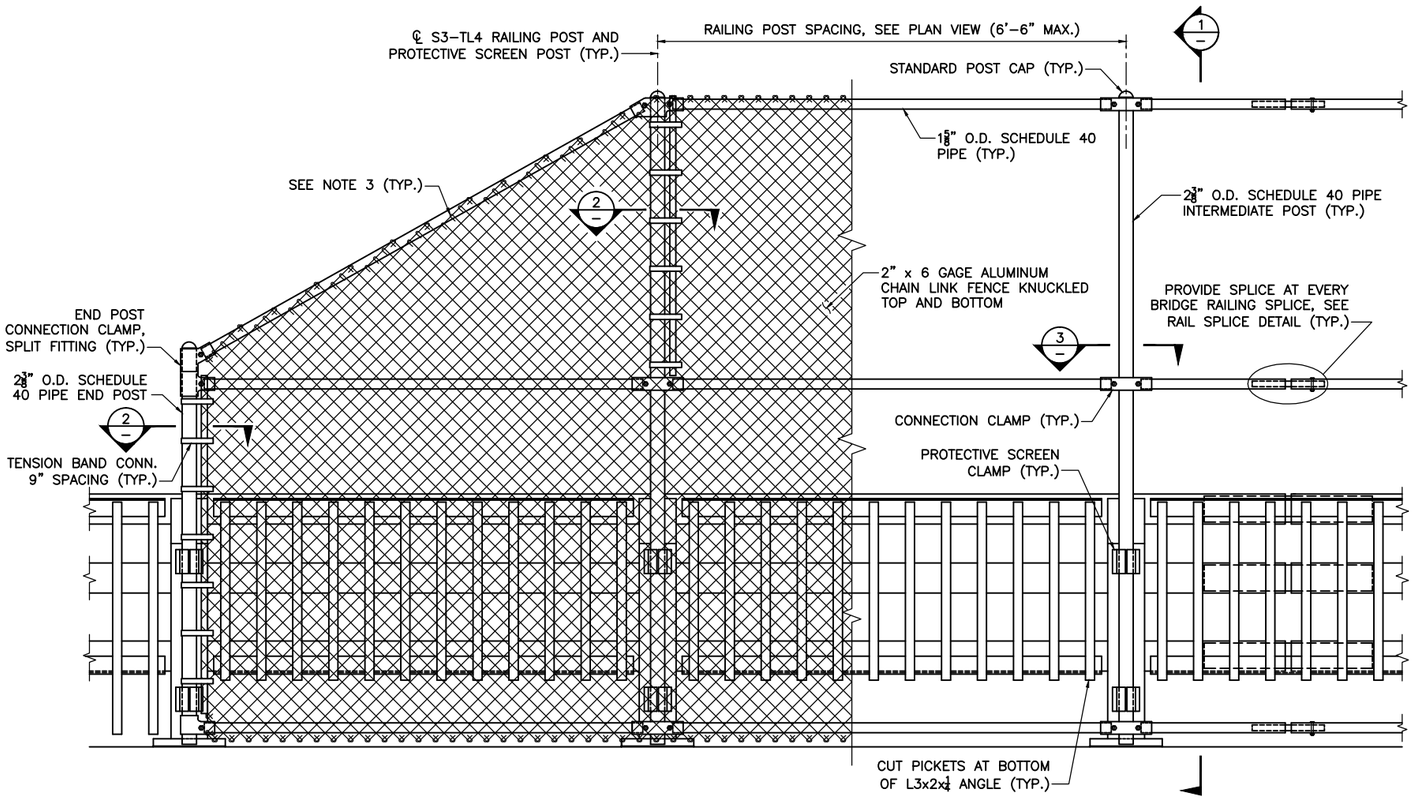
# CM-TL3 BRIDGE RAILING

SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)

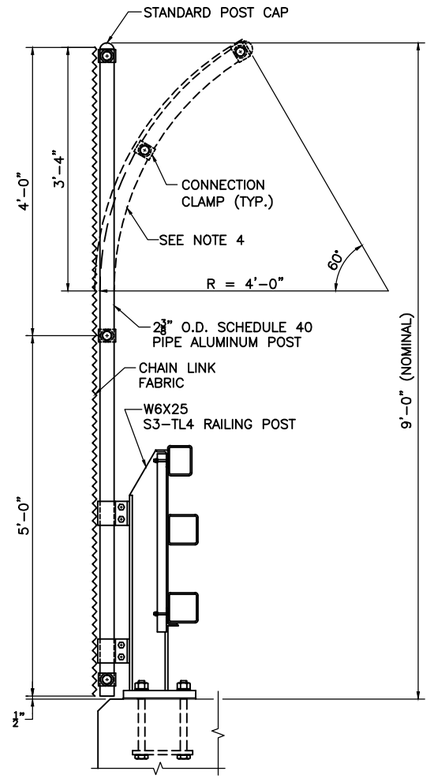
Date: June 2013

CM-TL3 BRIDGE RAILING.DWG 11-Mar-2014

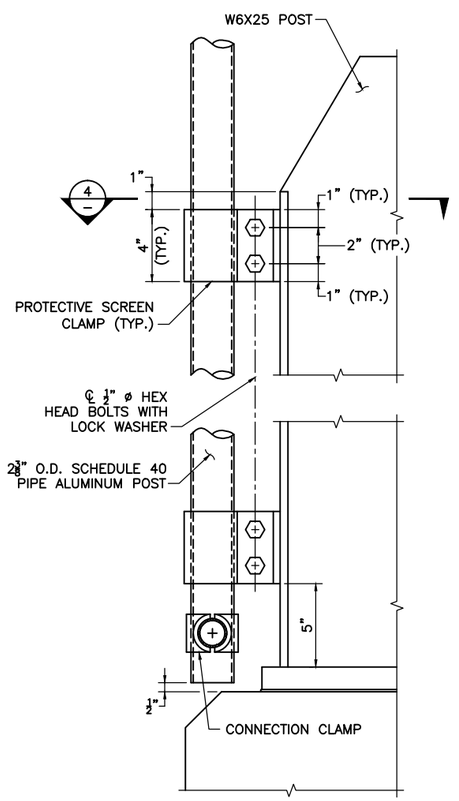
Xxxxx Structural Submittal (SH) DD-Month-YYYY




**ELEVATION**
SCALE: 1" = 1'–0"




**SECTION 1**
SCALE: 1" = 1'–0"



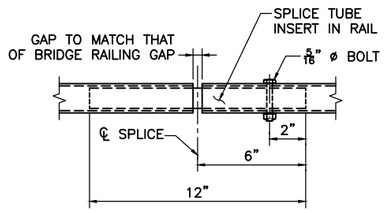

**ELEVATION – PROTECTIVE SCREEN CLAMPS**
SCALE: 3" = 1'–0"

## GENERAL NOTES:

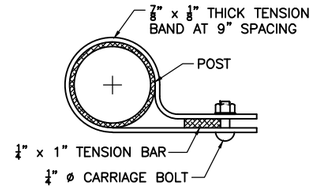
1. USE 6 GAGE TIES AT 12" O.C. TO ALL POSTS AND TOP 2 RAILS OR 3 RAILS (CURVED TOP). SPACE TIES TO BOTTOM RAIL AT 6" O.C.
2. ALL ALUMINUM, INCLUDING HARDWARE AND FABRIC, SHALL RECEIVE A 4±1 MIL POLYESTER POWDER COAT FINISH. THE COLOR SHALL MATCH THE COLOR OF THE S3–TL4 RAILING.
3. THE CHAIN LINK FABRIC SHALL BE SECURED BY KNUCKLING TOGETHER THE CUT ENDS OF THE FABRIC WIRE IN A MANNER SIMILAR TO THE ORIGINALLY MANUFACTURED END.
4. THE SCREEN TREATMENT TO BE USED (CURVED OR STRAIGHT TOP) IS SPECIFIED ELSEWHERE ON THE CONSTRUCTION DRAWINGS.
5. PICKETS ARE REQUIRED FOR CRASH SAFETY.

## MATERIALS:

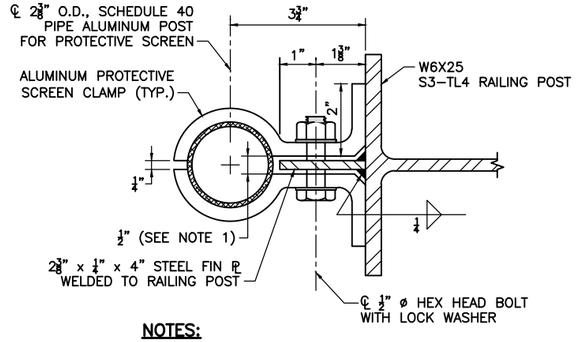
| | |
|---|---|
| POST AND RAILS | ASTM B 221, ALLOY 6061–T6, SCHEDULE 40 PIPE |
| TENSION BARS, RAIL SPLICES, WASHERS, AND POST CONN. CLAMPS | ASTM B 221, ALLOY 6061–T6 |
| FABRIC AND TIES | AASHTO M 181 TYPE III, ALLOY 6061–T89 OR T94; 6 GAGE |
| TENSION BANDS | ASTM B 221, ALLOY 6063–T5 |
| BOLTS | ASTM B 316, ALLOY 2024–T4 |
| NUTS | ASTM B 316, ALLOY 6061–T6 |
| PROTECTIVE SCREEN CLAMPS | ASTM B 221, ALLOY 6061–T6 |




**RAIL SPLICE**
SCALE: 3" = 1'–0"



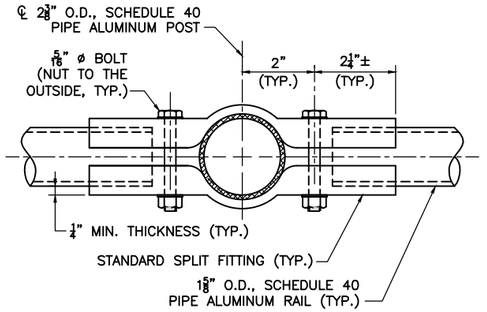

**SECTION 2**
**TENSION BAND CONNECTION**
SCALE: 6" = 1'–0"




**NOTES:**

1. DRAW FOR FABRICATION TO ENSURE CLAMPING ACTION.
2. SLIGHT VARIATIONS IN EXTRUSION DIMENSIONS MAY BE SUBMITTED FOR APPROVAL.

**SECTION 4**
SCALE: 6" = 1'–0"




**SECTION 3**
**POST CONNECTION CLAMP**
SCALE: 6" = 1'–0"

# TYPE I PROTECTIVE SCREEN

CITY/TOWN
STREET/ROUTE # OR NAME

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |

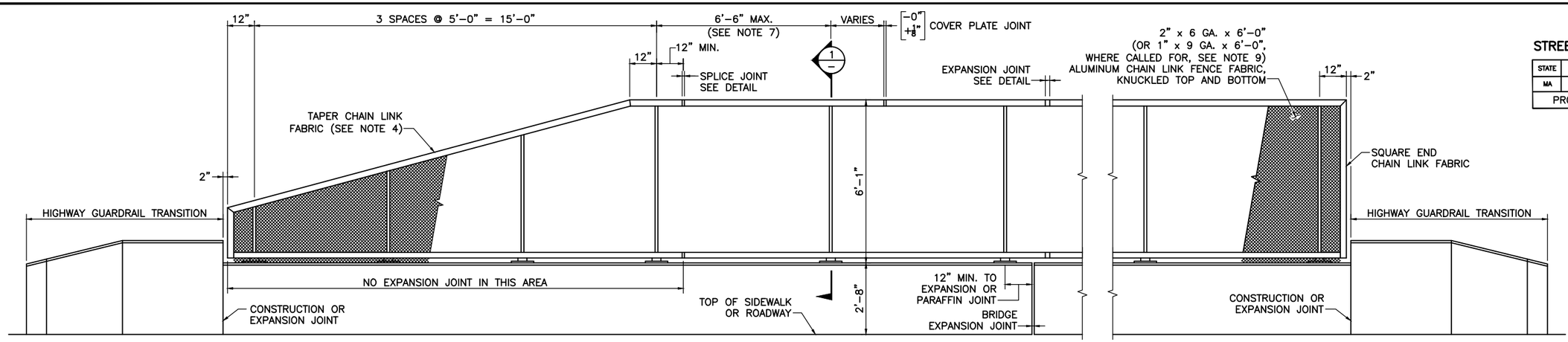
| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

**SHEET XX OF XX SHEETS BRIDGE NO. X–XX–XXX (XXX)**

**Date: June 2013**

TYPE I PROTECTIVE SCREEN.DWG 11-Mar-2014

Xxxxxx Structural Submittal (Sil) DD-Month-YYYY



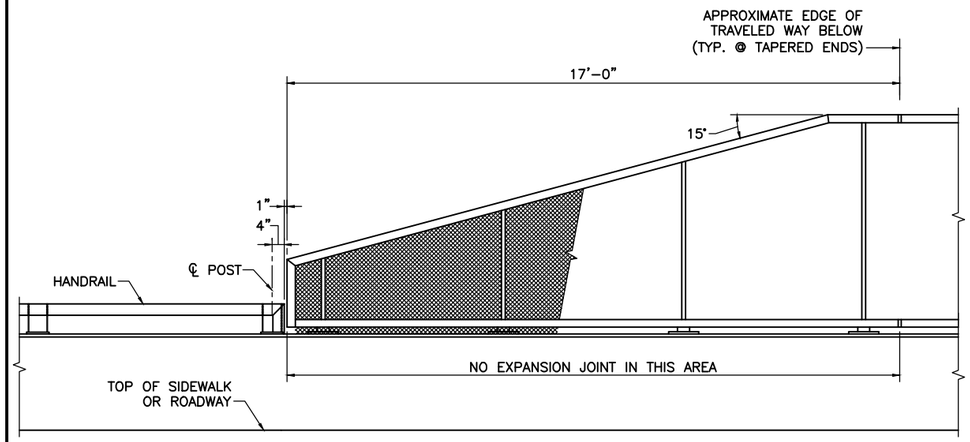

## PROTECTIVE SCREEN ELEVATION

SCALE: 1/2" = 1'-0"

CITY/TOWN
STREET/ROUTE # OR NAME

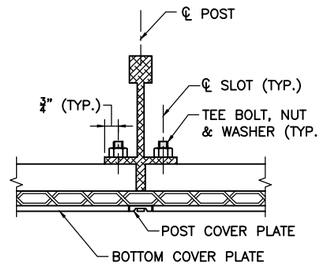
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |

TYPE II PROTECTIVE SCREEN (SHEET 1 OF 2).DWG 11-Mar-2014



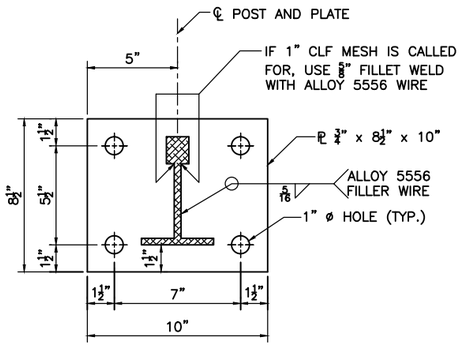

## DETAIL AT HANDRAIL

SCALE: 1/2" = 1'-0"



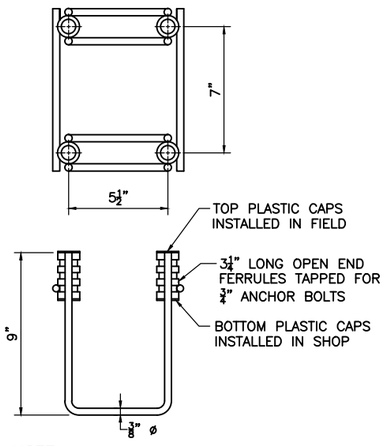

## SECTION 2

SCALE: 3" = 1'-0"




## BASE PLATE DETAIL

SCALE: 3" = 1'-0"




**NOTE:**
GALVANIZED OR ELECTROPLATE FINISH.

## ANCHOR CAGE

SCALE: 3" = 1'-0"




## SETTING OF POSTS (PROFILE GRADE OVER 3%)

SCALE: 1 1/2" = 1'-0"

## GENERAL NOTES:

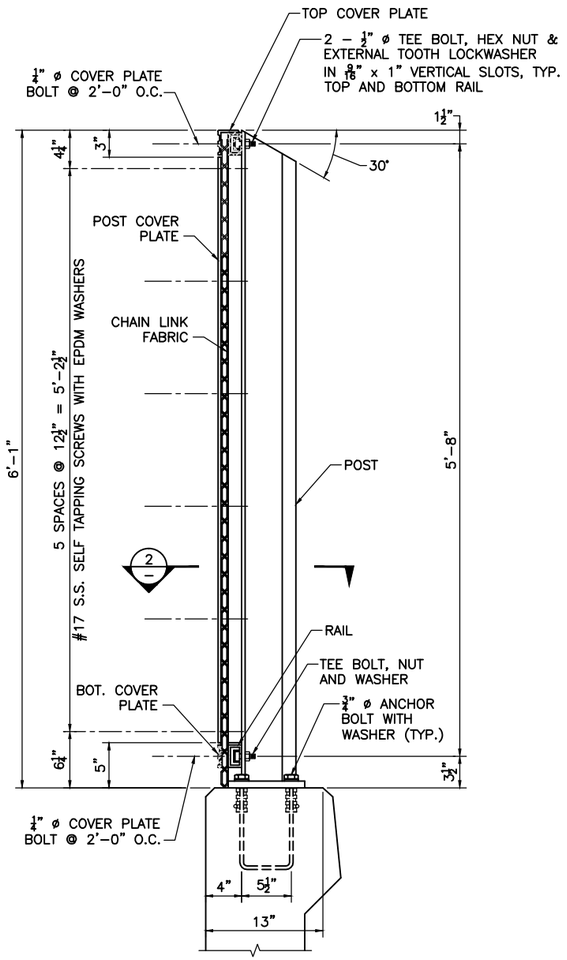
1. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR POSTS, IF POSSIBLE.
2. RAILS SHALL HAVE AN EXPANSION JOINT IN THE PANEL OVER A BRIDGE EXPANSION JOINT AND AT 30 FOOT MAXIMUM SPACING ELSEWHERE.
3. BOTTOM OF POST BASE PLATE TO BE SET ON A 1/8" MOLDED FABRIC BEARING PAD (M9.16.2). THE THICKNESS OF THE PAD SHALL BE IGNORED BY THE DETAILER.
4. THE CHAIN LINK FABRIC SHALL BE SECURED BY KNUCKLING TOGETHER THE CUT ENDS OF THE FABRIC WIRE IN A MANNER SIMILAR TO THE ORIGINALLY MANUFACTURED END.
5. WHERE THE R.O.W. FENCE MUST MEET THE SCREEN, USE THE SQUARE END TO HIGHWAY GUARDRAIL TRANSITION DETAIL.
6. THE SCREEN END TREATMENT TO BE USED (SQUARE OR TAPERED) IS SPECIFIED ELSEWHERE ON THE CONSTRUCTION DRAWINGS.
7. POST SPACING SHALL BE UNIFORM BETWEEN TAPERED ENDS.
8. SET POSTS PERPENDICULAR TO GRADE FOR GRADES UP TO 3%. SET POSTS PLUMB FOR GRADES GREATER THEN 3%.
9. USE 2" x 6 GA. FABRIC EXCEPT OVER MBTA RAPID TRANSIT LINES WHERE 1" x 9 GA. FABRIC SHALL BE USED.

## FINISHES:

1. POSTS, RAILS, COVER PLATES AND SPLICE PLATES SHALL RECEIVE A DARK BRONZE ANODIZED FINISH.
2. CHAIN LINK FABRIC SHALL RECEIVE A 4±1 MIL POLYESTER POWDER COAT FINISH. THE COLOR SHALL BE DARK BRONZE TO MATCH COLOR OF ANODIZED ALUMINUM FRAMEWORK.
3. #17 SELF TAPPING SCREWS AND 1/4" ø COVER PLATE BOLTS TO BE COLORED TO MATCH THE ANODIZED EXTRUSIONS.

## MATERIALS:

| | |
|---|---|
| EXTRUSIONS & PLATES | ASTM B 221, ALLOY 6061-T6 |
| CHAIN LINK FABRIC | AASHTO M 181 TYPE III (ALLOY 6061-T89 OR T94) |
| SELF TAPPING SCREWS | TYPE 304 STAINLESS STEEL WITH 1/4" THICK EPDM (ETHYLENE PROPYLENE DIENE MONOMER) WASHERS |
| ANCHOR BOLTS | AASHTO M 164 GALVANIZED (ROTATION CAPACITY TEST NOT REQUIRED) |
| TEE BOLTS | ASTM A 307 GALVANIZED OR TYPE 304 STAINLESS STEEL |
| COVER PLATE BOLTS | TYPE 304 STAINLESS STEEL WITH OVERSIZED STAINLESS WASHER AND STAINLESS NUT WITH NYLON INSERT |




## SECTION 1

SCALE: 1 1/2" = 1'-0"

| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
|---|---|
| DATE | DESCRIPTION |
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Xxxxxx Structural Submittal (Sil) DD-Month-YYYY

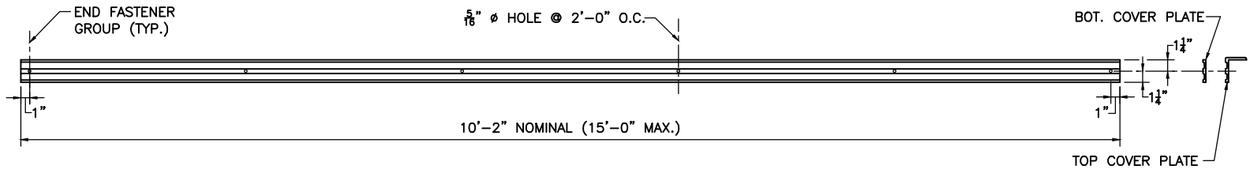
# TYPE II PROTECTIVE SCREEN (SHEET 1 OF 2)

**SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)**

**Date: June 2013**

CITY/TOWN
STREET/ROUTE # OR NAME

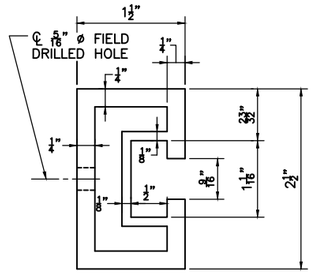
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |




## TOP AND BOTTOM COVER PLATE
SCALE: 1½" = 1'–0"

## COVER PLATE NOTES:

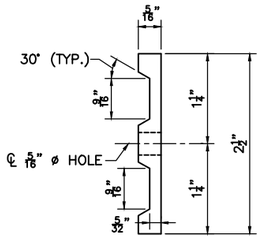
1. COVER PLATES MAY BE CONTINUOUS OVER A RAIL SPLICE. COVER PLATES SHALL BE FIELD CUT AS REQUIRED TO CLEAR THE EXPANSION JOINT. SEE DETAIL AT EXPANSION JOINT.
2. FIELD DRILL 5/16" ø HOLE 1" FROM THE FIELD CUT END OF A COVER PLATE, UNLESS THERE IS AN EXISTING HOLE WITHIN 6" FROM THE COVER PLATE END.
3. FIELD PAINT THE FIELD CUT ENDS OF THE COVER PLATES TO MATCH THE ANODIZED COLOR.



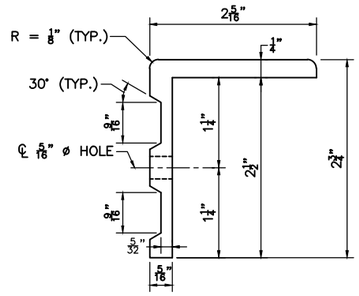

**NOTE:**

OTHER CONFIGURATIONS OF THE INTERNAL WALLS OF THE RAIL EXTRUSION MAY BE SUBMITTED FOR APPROVAL.

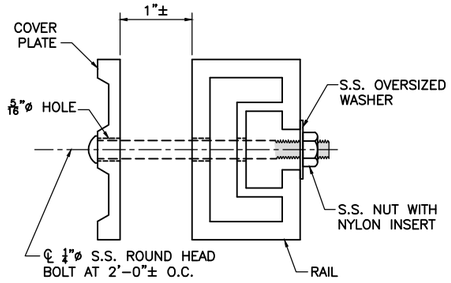
## RAIL EXTRUSION
FULL SCALE




## BOTTOM COVER PLATE EXTRUSION
FULL SCALE



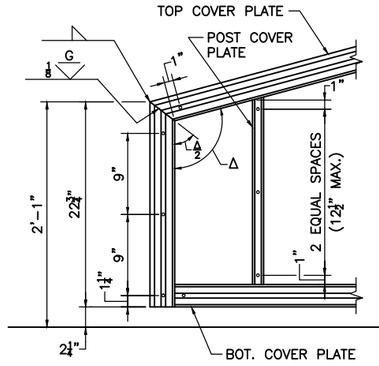

## TOP COVER PLATE EXTRUSION
FULL SCALE



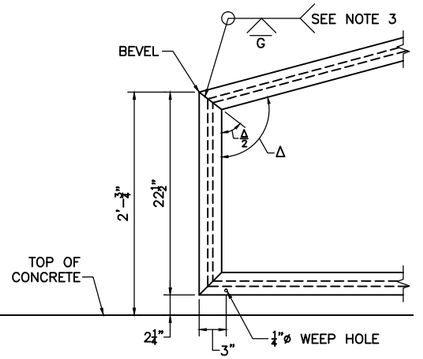

**NOTE:**

BOLTS SHALL BE TYPE 304 WITH A DRIVE HEAD TO BE COLORED TO MATCH ANODIZING.

## RAIL AND COVER PLATE DETAIL
FULL SCALE




## COVER PLATE DETAILS

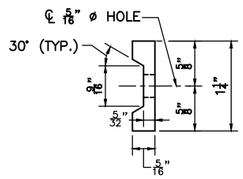



## RAIL DETAILS

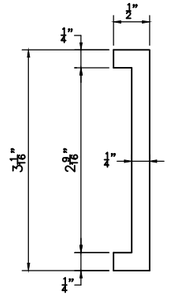
**NOTES:**

1. WELDING OF TOP COVER PLATE AND RAILS OF NON–TAPERED END IS SIMILAR.
2. WELDS AND MITERING TYPICAL FOR ALL ANGLED CORNERS.
3. WELD TYPICAL FOR TOP AND BOTTOM END CORNERS OF RAIL. INTERRUPT WELD AT SLOT IN BACK OF RAIL.

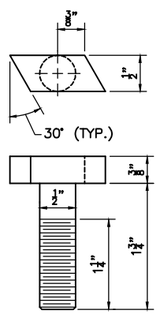
## TAPERED END DETAILS
SCALE: 1½" = 1'–0"



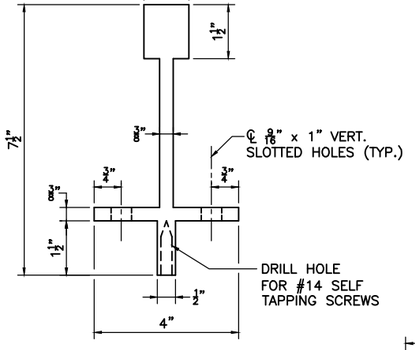

## POST COVER PLATE EXTRUSION
FULL SCALE



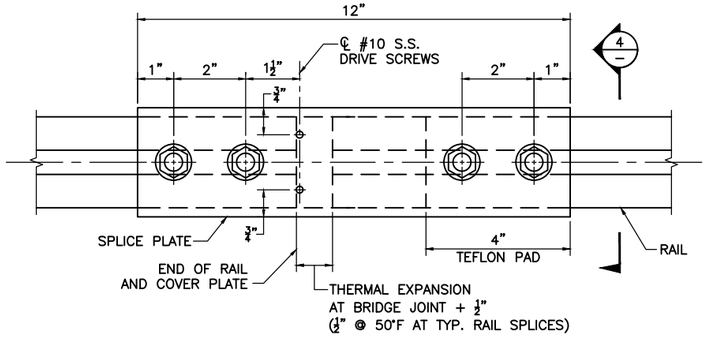

## SPLICE PLATE EXTRUSION
FULL SCALE



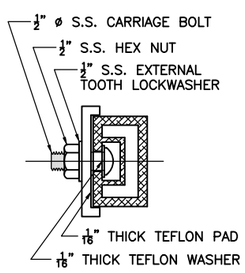

## TEE BOLT
FULL SCALE



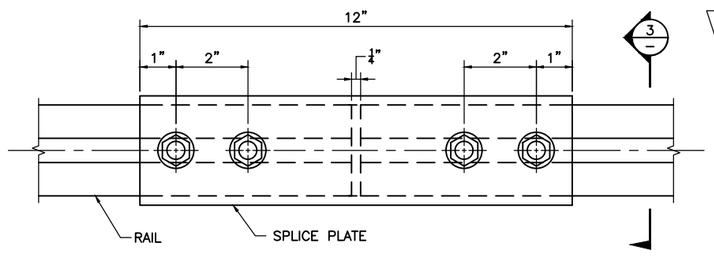

## POST EXTRUSION
SCALE: 6" = 1'–0"



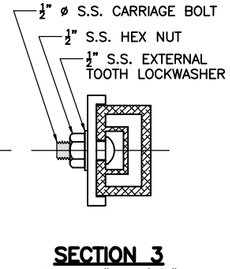

## DETAIL AT EXPANSION JOINT
SCALE: 6" = 1'–0"




## SECTION 4
SCALE: 6" = 1'–0"




## DETAIL AT SPLICE JOINT
SCALE: 6" = 1'–0"




## SECTION 3
SCALE: 6" = 1'–0"

# TYPE II PROTECTIVE SCREEN (SHEET 2 OF 2)

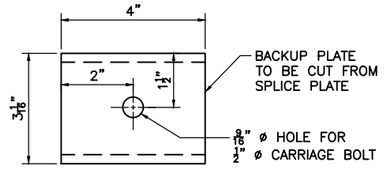
| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

SHEET XX OF XX SHEETS BRIDGE NO. X–XX–XXX (XXX)

Date: June 2013

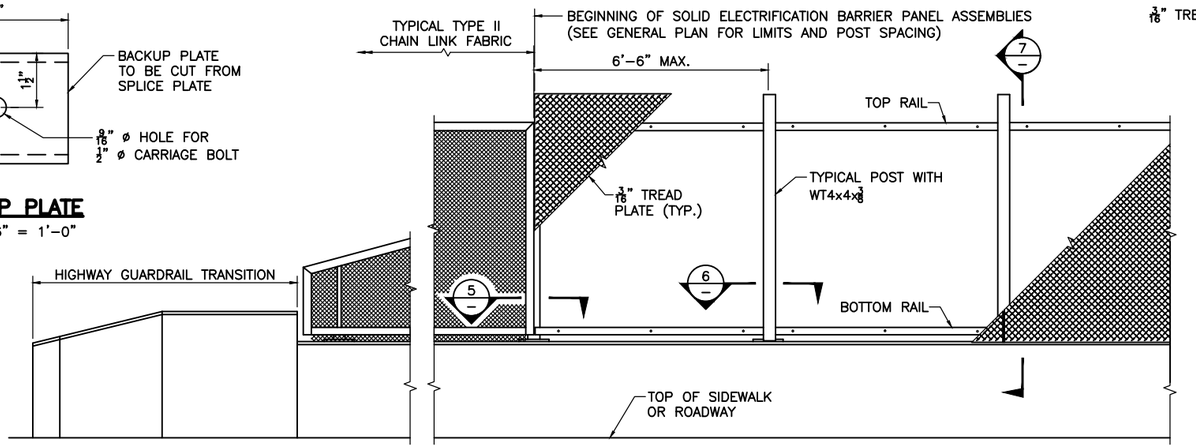
TYPE II PROTECTIVE SCREEN (SHEET 2 OF 2).DWG 11-Mar-2014

Xxxxxx Structural Submittal (SH) DD-Month-YYYY



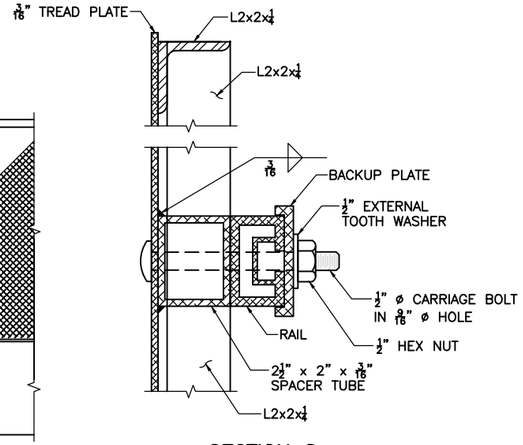

## BACKUP PLATE

SCALE: 6" = 1'–0"




## TYPE II ELECTRIFICATION BARRIER ELEVATION

SCALE: ½" = 1'–0"

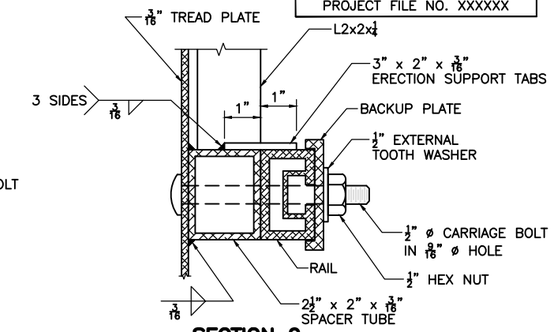



## SECTION 8

SCALE: 6" = 1'–0"

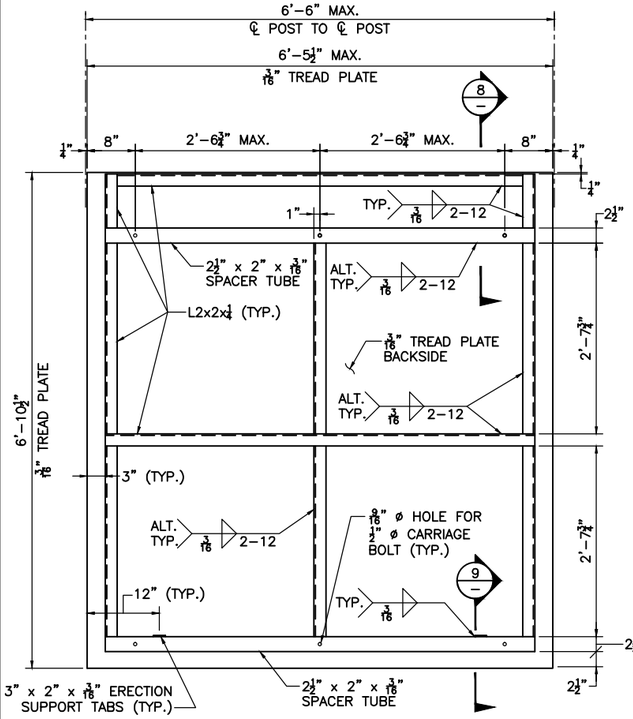
CITY/TOWN
STREET/ROUTE # OR NAME

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |



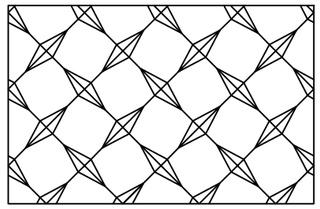

## SECTION 9

SCALE: 6" = 1'–0"



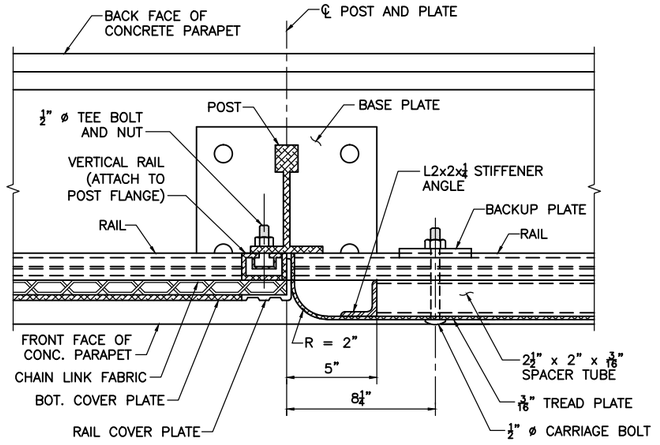

## TREAD PLATE SUPPORT FRAMING ELEVATION

SCALE: 1" = 1'–0"



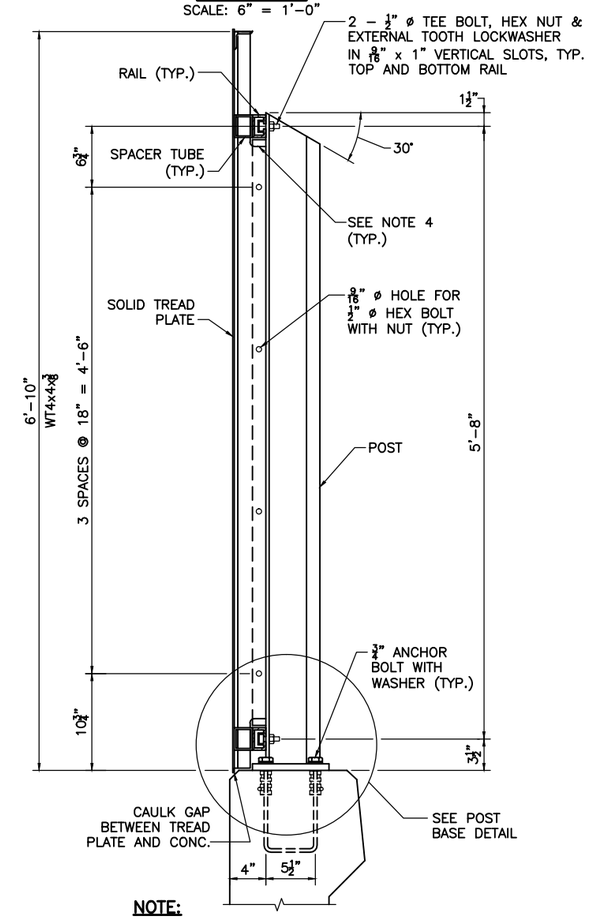
## STANDARD 3/16" TREAD PLATE DETAIL

SCALE: 6" = 1'–0"




## SECTION 5 – CHAIN LINK FENCE TO SOLID TREAD PLATE POST DETAIL

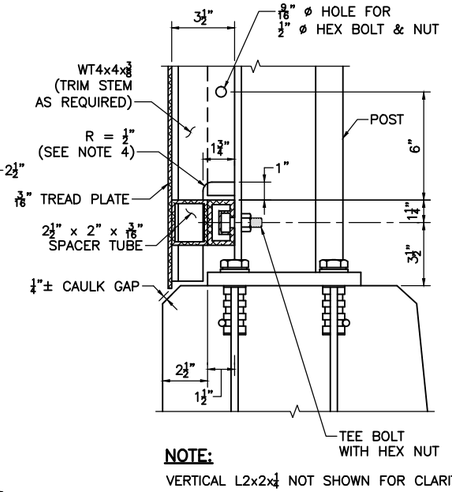
SCALE: 3" = 1'–0"




NOTE:
VERTICAL L2x2x¼ NOT SHOWN FOR CLARITY.

## SECTION 7

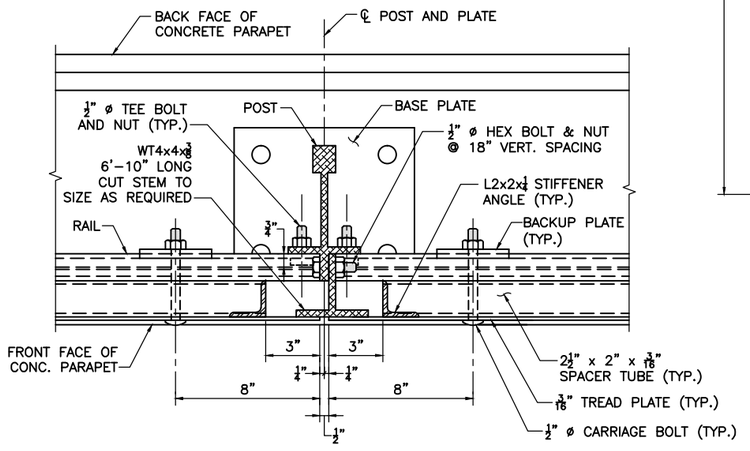
SCALE: 1½" = 1'–0"




NOTE:
VERTICAL L2x2x¼ NOT SHOWN FOR CLARITY.

## POST BASE DETAIL

SCALE: 3" = 1'–0"




## SECTION 6 – TYPICAL POST DETAIL

SCALE: 3" = 1'–0"

## ELECTRIFICATION BARRIER NOTES:

1. ELECTRIFICATION BARRIER PANEL ASSEMBLIES SHALL BE MOUNTED ON A TYPE II SCREEN FRAME. FOR TYPE II SCREEN DETAILS, GENERAL NOTES, MATERIAL REQUIREMENTS AND FINISHES, SEE SHEETS XX AND XX. THE ELECTRIFICATION BARRIER REQUIRES THE POST TO BASE WELD DETAIL SPECIFIED FOR THE 1" CHAIN LINK MESH.
2. ½" ø HEX BOLTS AND CARRIAGE BOLTS SHALL BE TYPE 304 STAINLESS STEEL. EXTRUSIONS, PLATES AND SHAPES SHALL BE ASTM B 221, ALLOY 6061–T6.
3. PANEL ASSEMBLIES SHALL RECEIVE A 4±1 MIL POLYESTER POWDER COAT FINISH. COLOR SHALL MATCH EXTRUSION ANODIZING. THE HEADS OF THE CARRIAGE BOLTS SHALL BE PAINTED TO MATCH THE COLOR OF THE POWDER COAT FINISH.
4. COPE WT4x4x3/8 AS SHOWN TO FIT AROUND TOP AND BOTTOM RAILS.
5. THE 9/16" ø HOLES FOR THE ½" ø CARRIAGE BOLTS SHALL BE FIELD DRILLED THROUGH THE TOP AND BOTTOM RAIL EXTRUSIONS. THE BARRIER PLATE ASSEMBLY SHALL BE USED TO DETERMINE THE EXACT LOCATION OF THE HOLES.

| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

# TYPE II ELECTRIFICATION BARRIER

SHEET XX OF XX SHEETS BRIDGE NO. X–XX–XXX (XXX)

Date: June 2013

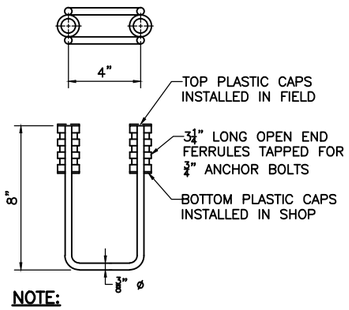
TYPE II ELECTRIFICATION BARRIER.DWG 11-Mar-2014

Xxxxxx Structural Submittal (Sh) DD-Month-YYYY

CITY/TOWN
STREET/ROUTE # OR NAME

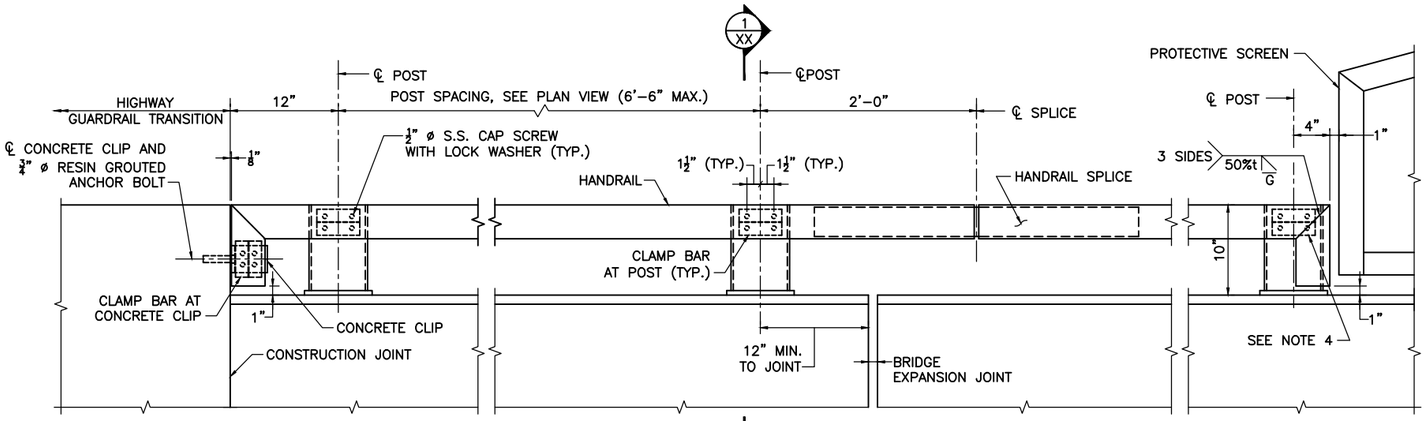
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |

HANDRAIL.DWG 11-Mar-2014

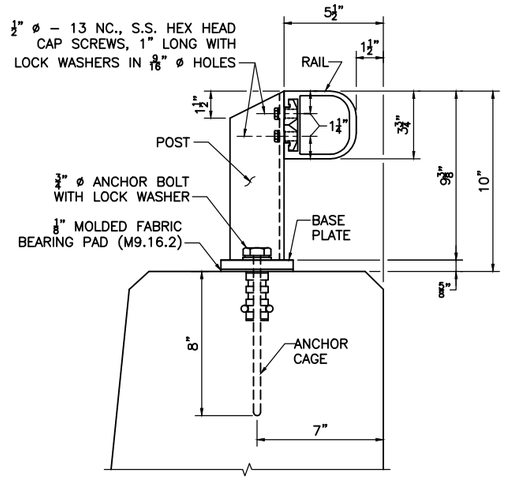



**NOTE:**
GALVANIZED OR ELECTROPLATE FINISH.

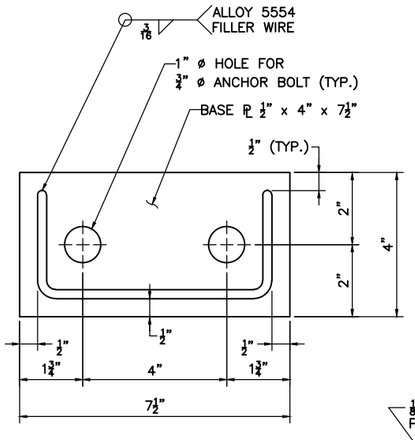
## ANCHOR CAGE
SCALE: 3" = 1'-0"



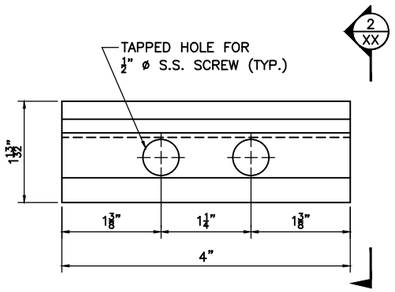

## HANDRAIL ELEVATION
SCALE: 1½" = 1'-0"



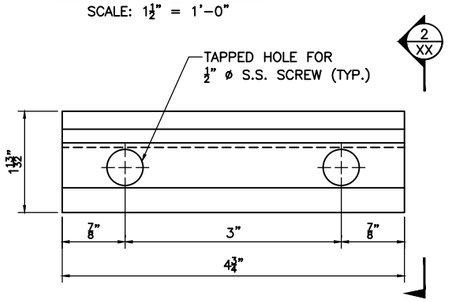

## SECTION 1
SCALE: 3" = 1'-0"



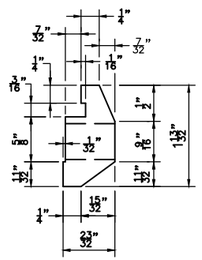

## BASE PLATE DETAIL
SCALE: 6" = 1'-0"



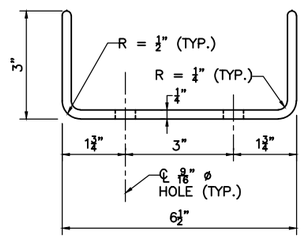

## CLAMP BAR AT CONCRETE CLIP
FULL SIZE



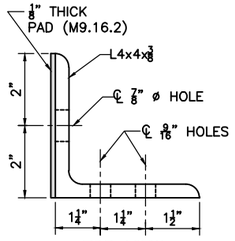

## CLAMP BAR AT POST
FULL SIZE



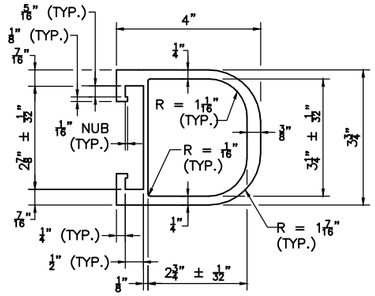

## SECTION 2
FULL SIZE



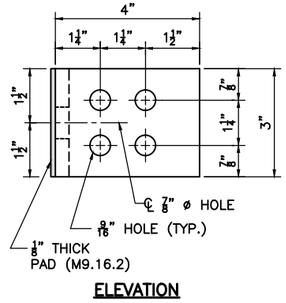

## POST DETAIL
SCALE: 6" = 1'-0"



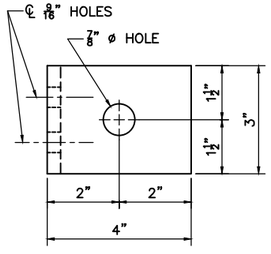

## TOP VIEW




## RAIL DETAIL
SCALE: 6" = 1'-0"

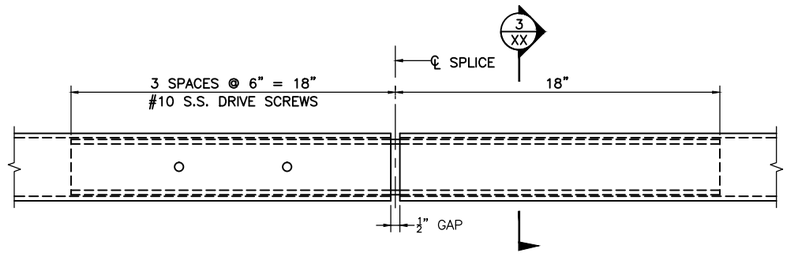



## ELEVATION

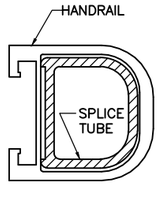



## SIDE VIEW

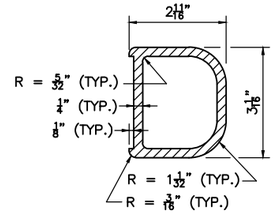
## CONCRETE CLIP
SCALE: 6" = 1'-0"




## HANDRAIL SPLICE
SCALE: 3" = 1'-0"




## SECTION 3
SCALE: 6" = 1'-0"




## SPLICE TUBE
SCALE: 6" = 1'-0"

## FINISH:

POSTS, RAILS, BASE PLATES, CONCRETE CLIP AND SPLICE TUBE SHALL RECEIVE A DARK BRONZE ANODIZED FINISH.

## MATERIALS:

| | |
|---|---|
| RAIL, POST AND BASE PLATE | ASTM B 221, ALLOY 6061-T6 |
| CLAMP BAR, RAIL SPLICE AND CONC. CLIP | ASTM B 221, ALLOY 6061-T6 |
| S.S. FASTENERS | ASTM A 193 GRADE B8 (TYPE 403) |
| ANCHOR BOLTS | AASHTO M 164 GALVANIZED (ROTATION CAPACITY TEST NOT REQUIRED) |
| ALUMINUM WASHERS | ASTM B 209 ALLOY ALCLAD 2024-T4 |

## GENERAL NOTES:

1. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR POST, IF POSSIBLE.
2. RAILS SHALL HAVE A HANDRAIL SPLICE IN THE PANEL OVER A BRIDGE EXPANSION JOINT. ½" GAP SHALL BE INCREASE AS REQUIRED.
3. OTHER CONFIGURATIONS OF THE INTERNAL WALLS OF THE RAIL EXTRUSION MAY BE SUBMITTED FOR APPROVAL.
4. AT 45° MITRES, TRIM OFF 1/16" NUB ON VERTICAL RAIL SECTION AS NEEDED TO ALLOW BOTTOM HORIZONTAL CLAMP BAR TO PROPERLY ENGAGE THE HORIZONTAL RAIL.

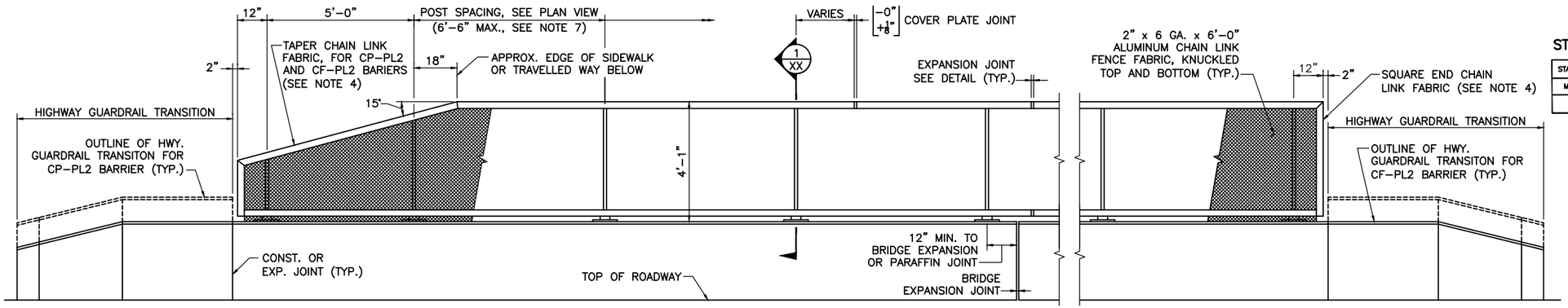
# HANDRAIL

| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

**SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)**

**Date: June 2013**

Xxxxxx Structural Submittal (Sil) DD-Month-YYYY

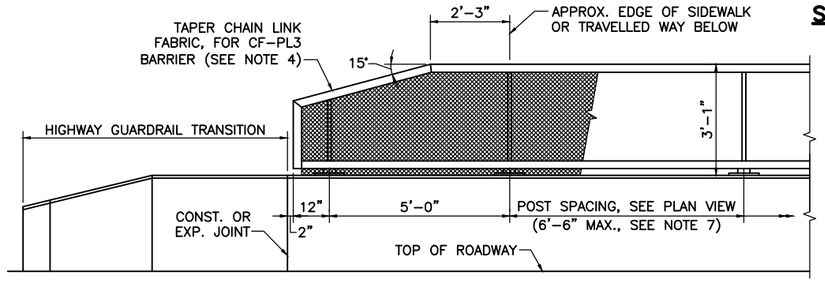



## SNOW FENCE ELEVATION FOR CP–PL2 AND CF–PL2 BARRIERS

SCALE: ½" = 1'–0"

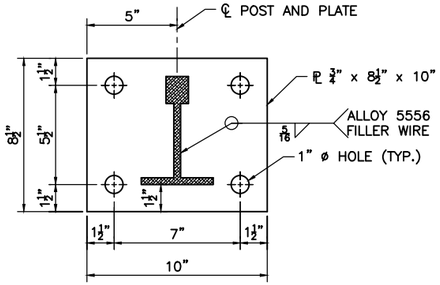
CITY/TOWN
STREET/ROUTE # OR NAME

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |



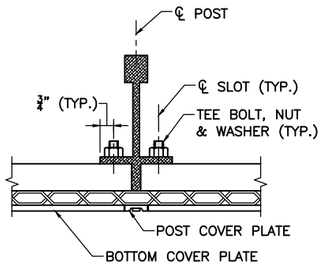

## SNOW FENCE ELEVATION FOR CF–PL3 BARRIERS

SCALE: ½" = 1'–0"



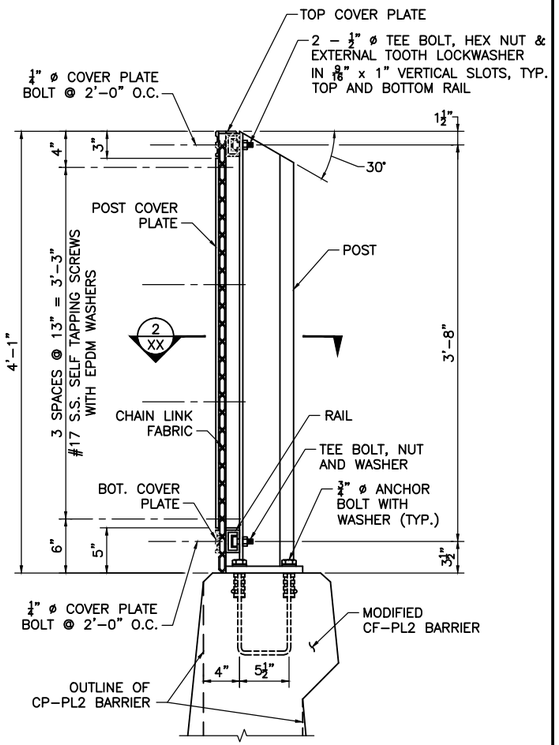

## BASE PLATE DETAIL

SCALE: 3" = 1'–0"



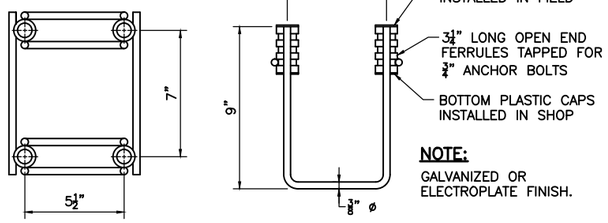

## SECTION 2

SCALE: 3" = 1'–0"




## SECTION 1
## CP–PL2 AND CF–PL2 BARRIERS

SCALE: 1½" = 1'–0"




## ANCHOR CAGE

SCALE: 3" = 1'–0"

### NOTE:

GALVANIZED OR ELECTROPLATE FINISH.

### GENERAL NOTES:

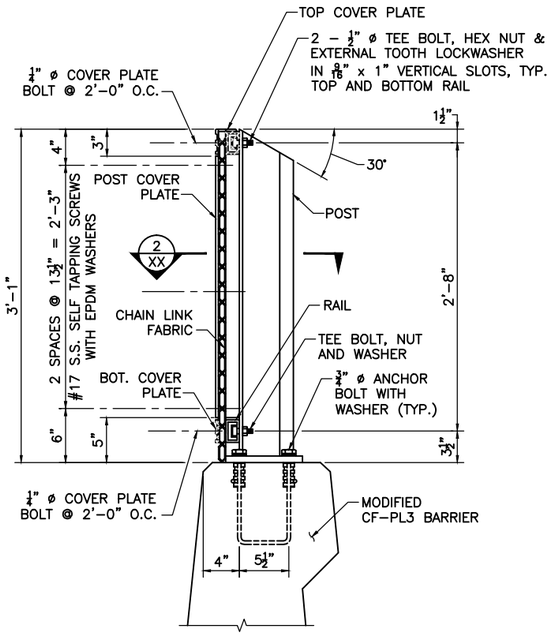
1. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR POSTS, IF POSSIBLE.
2. RAILS SHALL HAVE AN EXPANSION JOINT IN THE PANEL OVER A BRIDGE EXPANSION JOINT, IF ANY, AND AT 30 FOOT MAXIMUM SPACING ELSEWHERE.
3. BOTTOM OF POST BASE PLATE TO BE SET ON A ⅛" MOLDED FABRIC BEARING PAD (M9.16.2). THE THICKNESS OF THE PAD SHALL BE IGNORED BY THE DETAILER.
4. THE CHAIN LINK FABRIC SHALL BE SECURED BY KNUCKLING TOGETHER THE CUT ENDS OF THE FABRIC WIRE IN A MANNER SIMILAR TO THE ORIGINALLY MANUFACTURED END.
5. WHERE THE R.O.W. FENCE MUST MEET THE SCREEN, USE THE SQUARE END TO HIGHWAY GUARDRAIL TRANSITION DETAIL.
6. THE SCREEN END TREATMENT TO BE USED (SQUARE OR TAPERED) IS SPECIFIED ELSEWHERE ON THE CONSTRUCTION DRAWINGS.
7. POST SPACING SHALL BE UNIFORM BETWEEN TAPERED ENDS.
8. SET POSTS PERPENDICULAR TO GRADE FOR GRADES UP TO 1.5%. SET POSTS PLUMB FOR GRADES GREATER THAN 1.5%.

### FINISHES:

1. POSTS, RAILS, COVER PLATES AND SPLICE PLATES SHALL RECEIVE A DARK BRONZE ANODIZED FINISH.
2. CHAIN LINK FABRIC SHALL RECEIVE A 4±1 MIL POLYESTER POWDER COAT FINISH. THE COLOR SHALL BE DARK BRONZE TO MATCH COLOR OF ANODIZED ALUMINUM FRAMEWORK.
3. #17 SELF TAPPING SCREWS AND ¼" ø COVER PLATE BOLTS TO BE COLORED TO MATCH THE ANODIZED EXTRUSIONS.

### MATERIALS:

| | |
|---|---|
| EXTRUSIONS & PLATES | ASTM B 221, ALLOY 6061–T6 |
| CHAIN LINK FABRIC | AASHTO M 181 TYPE III (ALLOY 6061–T89 OR T94) |
| SELF TAPPING SCREWS | TYPE 304 STAINLESS STEEL WITH ¼" THICK EPDM (ETHYLENE PROPYLENE DIENE MONOMER) WASHERS |
| ANCHOR BOLTS | AASHTO M 164 GALVANIZED (ROTATION CAPACITY TEST NOT REQUIRED) |
| TEE BOLTS | ASTM A 307 GALVANIZED OR TYPE 304 STAINLESS STEEL |
| COVER PLATE BOLTS | TYPE 304 STAINLESS STEEL WITH OVERSIZED STAINLESS WASHER AND STAINLESS NUT WITH NYLON INSERT |




## SECTION 1
## CF–PL3 BARRIER

SCALE: 1½" = 1'–0"

# SNOW FENCE FOR CP–PL2 AND CF BARRIERS (SHEET 1 OF 2)

| DATE | DESCRIPTION |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| USE ONLY PRINTS OF LATEST DATE | |

SHEET XX OF XX SHEETS BRIDGE NO. X–XX–XXX (XXX)

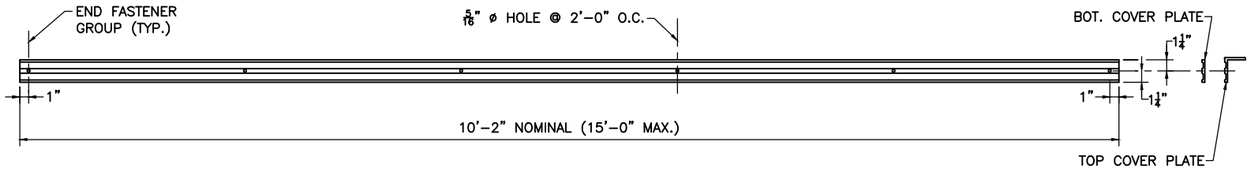
Date: June 2013

SNOW FENCE FOR CP-PL2 AND CF BARRIERS (SHEET 1 OF 2).DWG 11-Mar-2014

XxxxxX Structural Submittal (S#) DD-Month-YYYY

CITY/TOWN
STREET/ROUTE # OR NAME

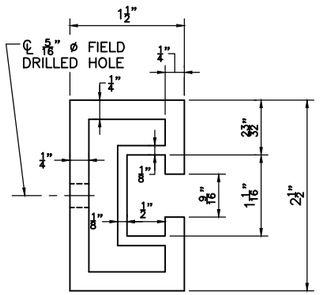
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |




**TOP AND BOTTOM COVER PLATE**
SCALE: 1½" = 1'-0"

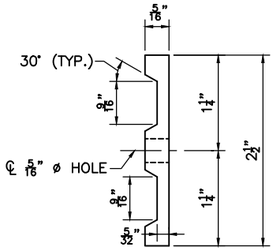
## COVER PLATE NOTES:

1. COVER PLATES MAY BE CONTINUOUS OVER A RAIL EXPANSION JOINT SPLICE. COVER PLATES SHALL BE FIELD CUT AS REQUIRED TO CLEAR THE EXPANSION JOINT. SEE DETAIL AT EXPANSION JOINT.
2. FIELD DRILL 5/16" ø HOLE 1" FROM THE FIELD CUT END OF A COVER PLATE, UNLESS THERE IS AN EXISTING HOLE WITHIN 6" FROM THE COVER PLATE END.
3. FIELD PAINT THE FIELD CUT ENDS OF THE COVER PLATES TO MATCH THE ANODIZED COLOR.

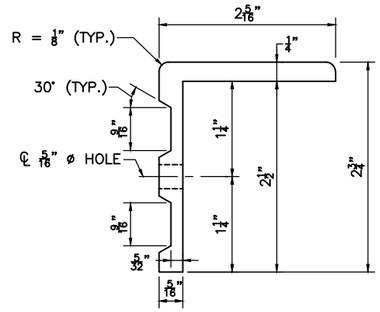



**NOTE:**
OTHER CONFIGURATIONS OF THE INTERNAL WALLS OF THE RAIL EXTRUSION MAY BE SUBMITTED FOR APPROVAL.

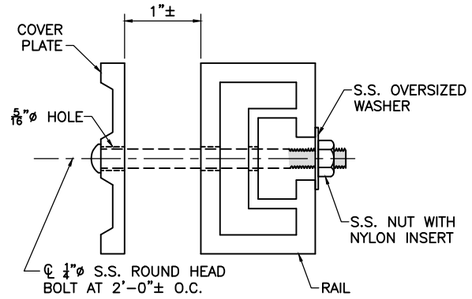
**RAIL EXTRUSION**
FULL SIZE




**BOTTOM COVER PLATE EXTRUSION**
FULL SIZE

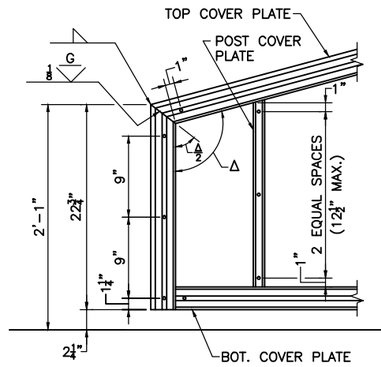



**TOP COVER PLATE EXTRUSION**
FULL SIZE

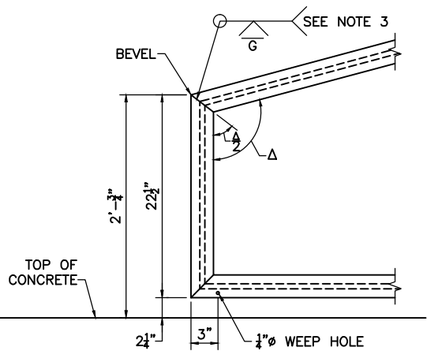



**NOTE:**
BOLTS SHALL BE TYPE 304 WITH A DRIVE HEAD TO BE COLORED TO MATCH ANODIZING.

**RAIL & COVER PLATE DETAIL**
FULL SIZE




**COVER PLATE DETAILS**

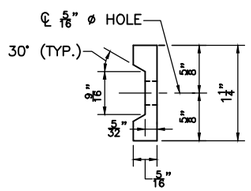



**RAIL DETAILS**

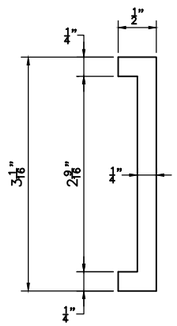
## NOTES:

1. WELDING OF TOP COVER PLATE AND RAILS OF NON-TAPERED END IS SIMILAR.
2. WELDS AND MITERING TYPICAL FOR ALL ANGLED CORNERS.
3. WELD TYPICAL FOR TOP AND BOTTOM END CORNERS OF RAIL. INTERRUPT WELD AT SLOT IN BACK OF RAIL.

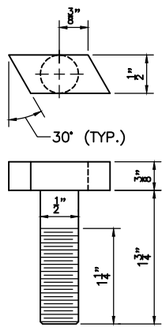
**TAPERED END DETAILS**
SCALE: 1½" = 1'-0"



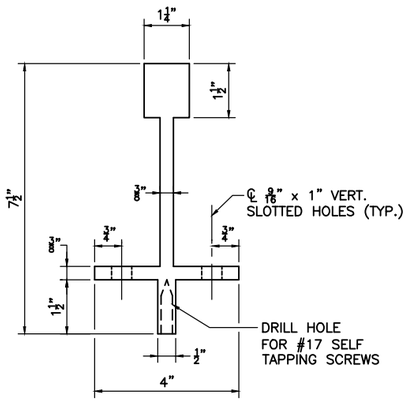

**POST COVER PLATE EXTRUSION**
FULL SIZE



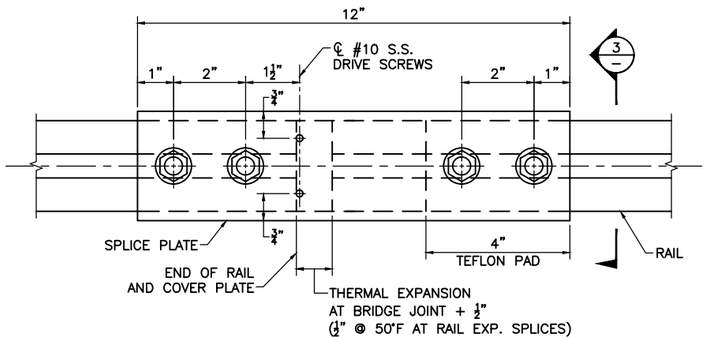

**SPLICE PLATE EXTRUSION**
FULL SIZE



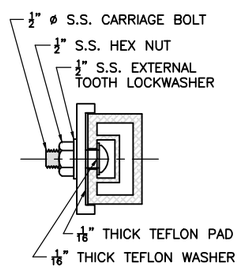

**TEE BOLT**
FULL SIZE




**POST EXTRUSION**
SCALE: 6" = 1'-0"




**DETAIL AT RAIL EXPANSION JOINT SPLICE**
SCALE: 6" = 1'-0"




**SECTION 3**
SCALE: 6" = 1'-0"

# SNOW FENCE FOR CP-PL2 AND CF BARRIERS (SHEET 2 OF 2)

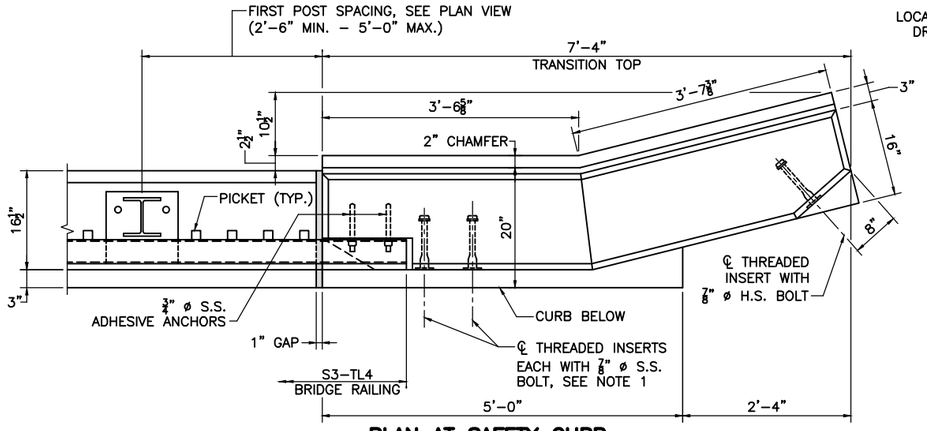
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
|---|---|
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)

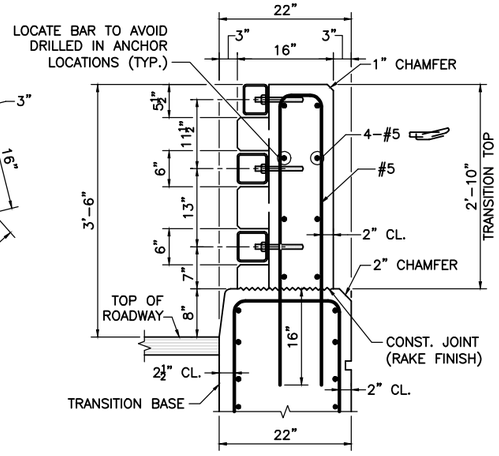
Date: June 2013

SNOW FENCE FOR CP-PL2 AND CF BARRIERS (SHEET 2 OF 2).DWG 11-Mar-2014

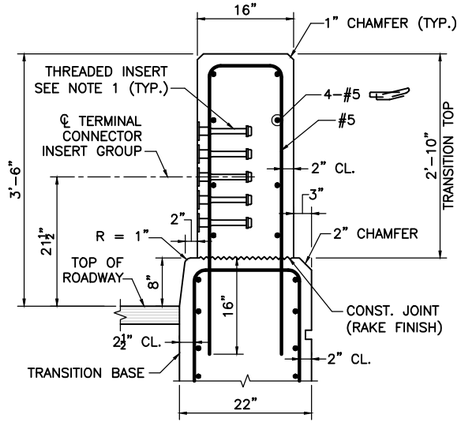
Xxxxxx Structural Submittal (S#) DD-Month-YYYY




## PLAN AT SAFETY CURB
SCALE: 1" = 1'-0"



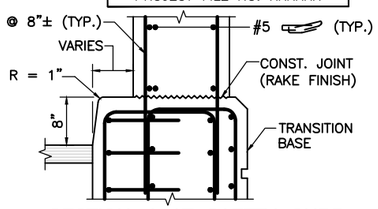

## SECTION 2 AT SAFETY CURB
SCALE: 1" = 1'-0"



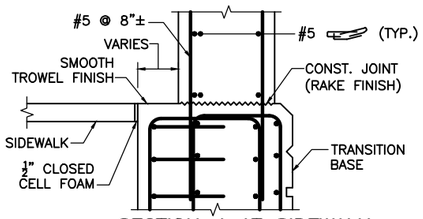

## SECTION 3 AT SAFETY CURB
SCALE: 1" = 1'-0"

CITY/TOWN
STREET/ROUTE # OR NAME

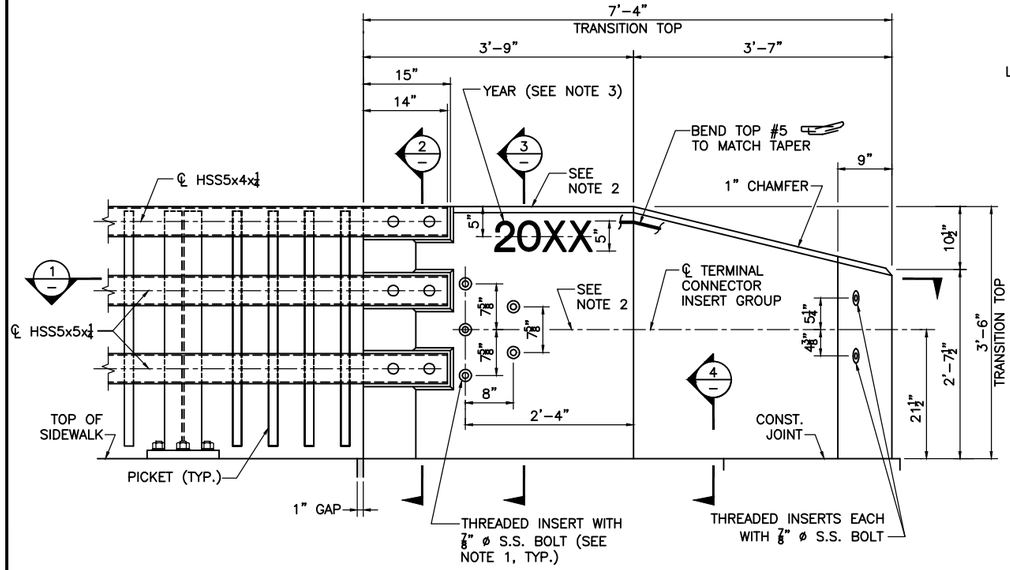
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |



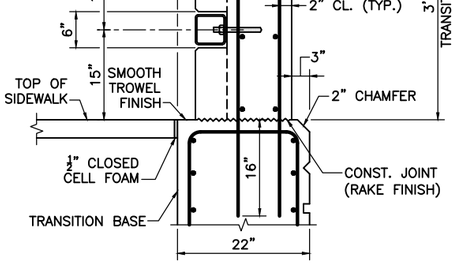

## SECTION 4 AT SAFETY CURB
SCALE: 1" = 1'-0"



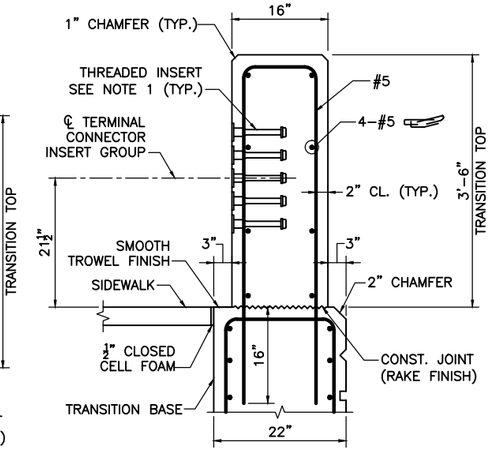

## SECTION 4 AT SIDEWALK
SCALE: 1" = 1'-0"



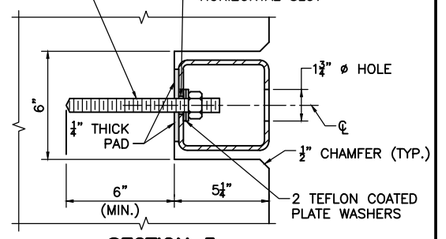

## ELEVATION AT SIDEWALK
SCALE: 1" = 1'-0"




## SECTION 2 AT SIDEWALK
SCALE: 1" = 1'-0"




## SECTION 3 AT SIDEWALK
SCALE: 1" = 1'-0"

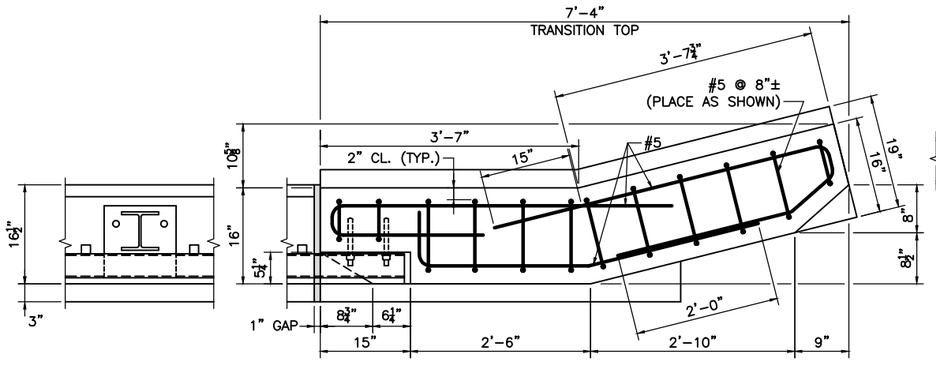



## SECTION 5
SCALE: 3" = 1'-0"

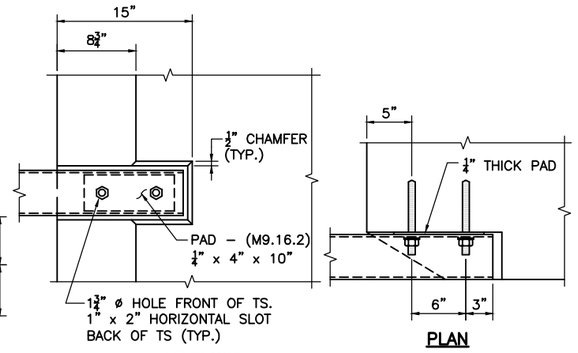
## NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" ø S.S. BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.
2. FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST.

   FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF CURB SHALL FOLLOW THE APPROACH GRADE. THE HEIGHT OF THE TRANSITION TOP SHALL VARY PROVIDED THAT THE MINIMUM DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE MET. THE BOTTOM OF THE TRANSITION BASE SHALL BE SET LEVEL WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO FOLLOW THE APPROACH GRADE.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR ALL GUARDRAIL TRANSITIONS.
4. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI, ¾", 685 HP CEMENT CONCRETE.
5. LIFTING DEVICES (NOT SHOWN), INCLUDING THEIR NUMBER AND LOCATION, SHALL BE DESIGNED AND DETAILED BY THE PRECASTER. THEY SHALL BE GALVANIZED AND SHALL BE PLACED AND RECESSED IN POCKETS TO PROVIDE 1½" CLEAR COVER TO THE FACE OF THE TRANSITION CONCRETE. THESE DEVICES SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS ALONG WITH ALL SUPPORTING CALCULATIONS AND/OR CATALOG CUTS. ONCE THE PRECAST TRANSITION IS SET IN PLACE, THE LIFTING DEVICE POCKETS SHALL BE FILLED WITH A NON-SHRINK GROUT THAT MATCHES THE COLOR OF THE TRANSITION CONCRETE WHEN CURED AND THE FILLED POCKETS SHALL BE RUBBED WITH A CORUNDUM STONE TO BLEND OUT THE JOINTS.




## SECTION 1
SCALE: 1" = 1'-0"




## ELEVATION

## PLAN

## RAIL ATTACHMENT
SCALE: 1½" = 1'-0"

| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
|---|---|
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

# TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR S3-TL4 RAILING

SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)

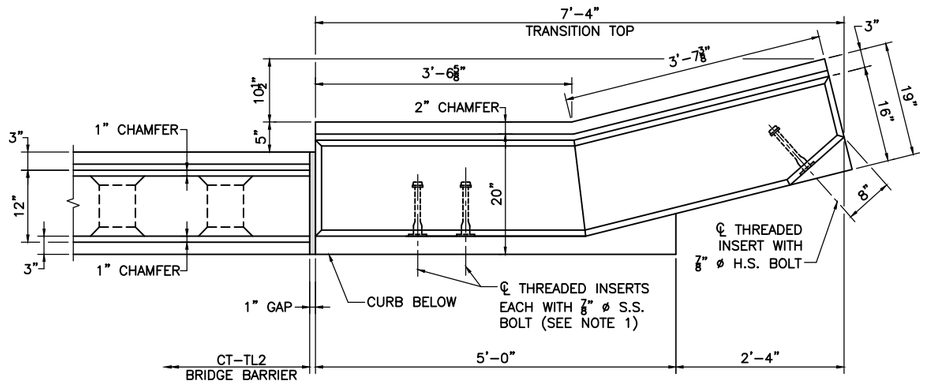
Date: June 2013

TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR S3-TL4 RAILING.DWG 11-Mar-2014

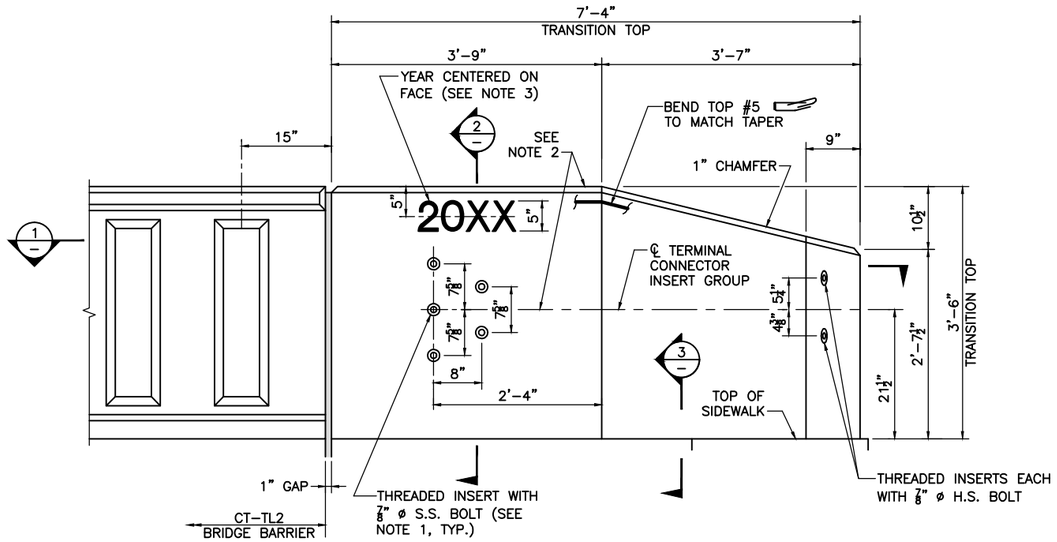
Xxxxx Structural Submittal (S#) DD-Month-YYYY

CITY/TOWN
STREET/ROUTE # OR NAME

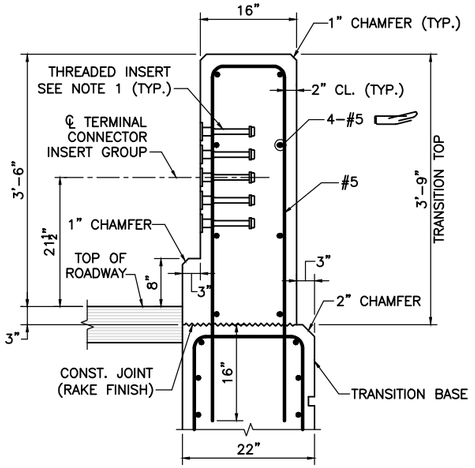
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |



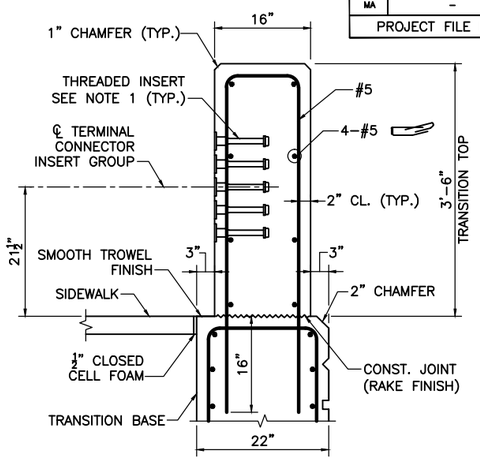

## PLAN AT SAFETY CURB
SCALE: 1" = 1'-0"



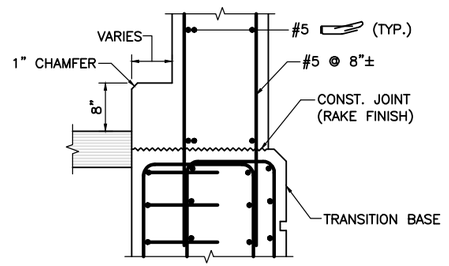

## ELEVATION AT SIDEWALK
SCALE: 1" = 1'-0"



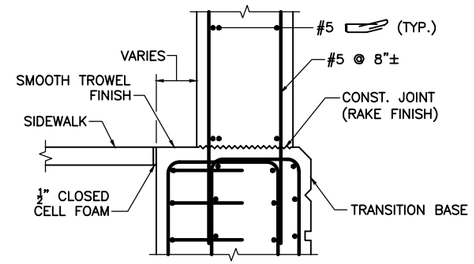

## SECTION 2 AT SAFETY CURB
SCALE: 1" = 1'-0"



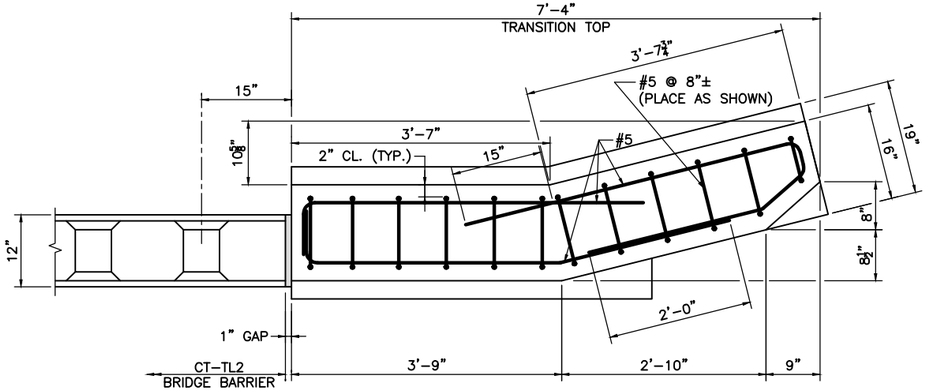

## SECTION 2 AT SIDEWALK
SCALE: 1" = 1'-0"




## SECTION 3 AT SAFETY CURB
SCALE: 1" = 1'-0"




## SECTION 3 AT SIDEWALK
SCALE: 1" = 1'-0"




## SECTION 1
SCALE: 1" = 1'-0"

## NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" ø S.S. BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.
2. FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST.

   FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF THE BRIDGE BARRIERS SHALL FOLLOW THE APPROACH GRADE. THE HEIGHT OF THE TRANSITION TOP SHALL VARY PROVIDED THAT THE MINIMUM DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE MET. THE BOTTOM OF THE TRANSITION BASE SHALL BE SET LEVEL WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO FOLLOW THE APPROACH GRADE.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR ALL GUARDRAIL TRANSITIONS.
4. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI, ¾", 685 HP CEMENT CONCRETE.
5. LIFTING DEVICES (NOT SHOWN), INCLUDING THEIR NUMBER AND LOCATION, SHALL BE DESIGNED AND DETAILED BY THE PRECASTER. THEY SHALL BE GALVANIZED AND SHALL BE PLACED AND RECESSED IN POCKETS TO PROVIDE 1½" CLEAR COVER TO THE FACE OF THE TRANSITION CONCRETE. THESE DEVICES SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS ALONG WITH ALL SUPPORTING CALCULATIONS AND/OR CATALOG CUTS. ONCE THE PRECAST TRANSITION IS SET IN PLACE, THE LIFTING DEVICE POCKETS SHALL BE FILLED WITH A NON-SHRINK GROUT THAT MATCHES THE COLOR OF THE TRANSITION CONCRETE WHEN CURED AND THE FILLED POCKETS SHALL BE RUBBED WITH A CORUNDUM STONE TO BLEND OUT THE JOINTS.

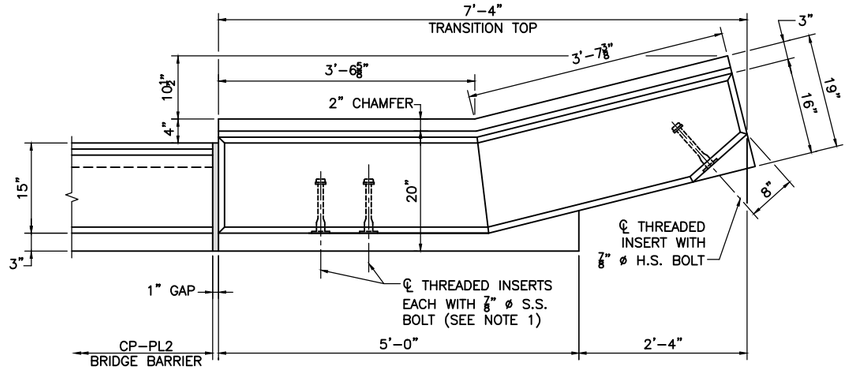
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
|---|---|
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

# TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR CT-TL2 BARRIER

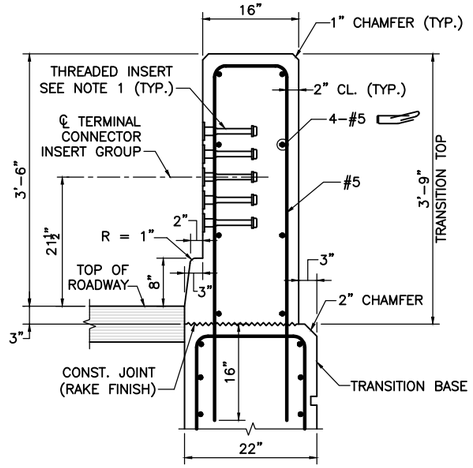
SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)

Date: June 2013

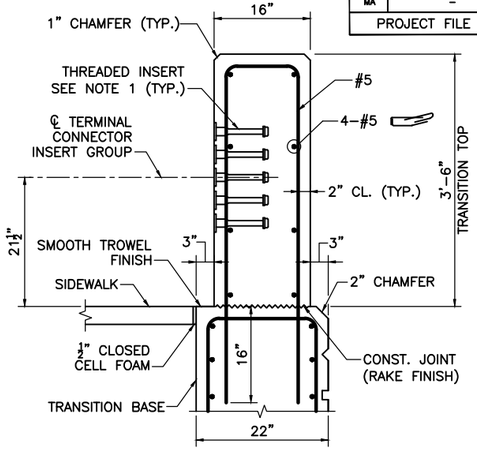
11-Mar-2014
TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR CT-TL2 BARRIER.DWG
Xxxxx Structural Submittal (SI) DD-Month-YYYY



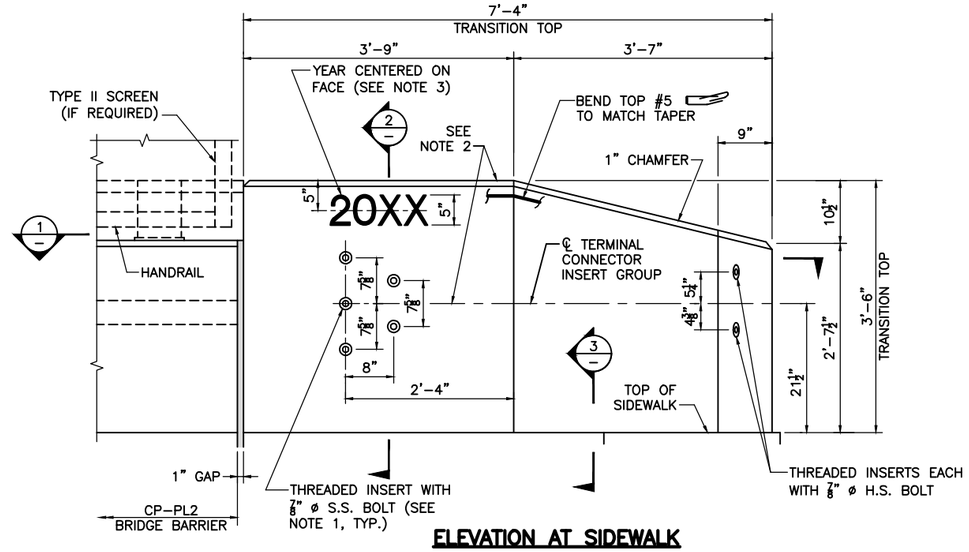

## PLAN AT SAFETY CURB
SCALE: 1" = 1'-0"



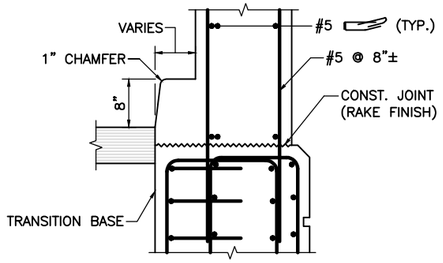

## SECTION 2 AT SAFETY CURB
SCALE: 1" = 1'-0"



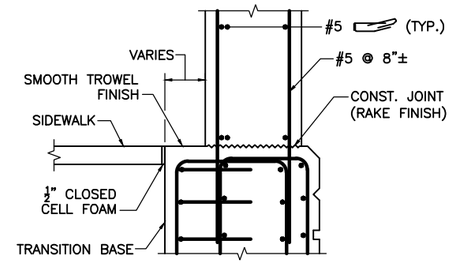

## SECTION 2 AT SIDEWALK
SCALE: 1" = 1'-0"



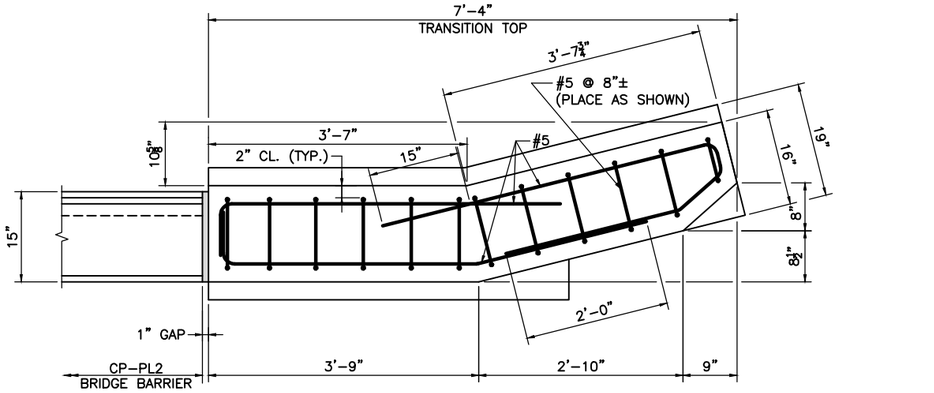

## ELEVATION AT SIDEWALK
SCALE: 1" = 1'-0"




## SECTION 3 AT SAFETY CURB
SCALE: 1" = 1'-0"




## SECTION 3 AT SIDEWALK
SCALE: 1" = 1'-0"




## SECTION 1
SCALE: 1" = 1'-0"

## NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" ø S.S. BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.
2. FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST.

   FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF THE BRIDGE BARRIERS SHALL FOLLOW THE APPROACH GRADE. THE HEIGHT OF THE TRANSITION TOP SHALL VARY PROVIDED THAT THE MINIMUM DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE MET. THE BOTTOM OF THE TRANSITION BASE SHALL BE SET LEVEL WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO FOLLOW THE APPROACH GRADE.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR ALL GUARDRAIL TRANSITIONS.
4. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI, ¾", 685 HP CEMENT CONCRETE.
5. LIFTING DEVICES (NOT SHOWN), INCLUDING THEIR NUMBER AND LOCATION, SHALL BE DESIGNED AND DETAILED BY THE PRECASTER. THEY SHALL BE GALVANIZED AND SHALL BE PLACED AND RECESSED IN POCKETS TO PROVIDE 1½" CLEAR COVER TO THE FACE OF THE TRANSITION CONCRETE. THESE DEVICES SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS ALONG WITH ALL SUPPORTING CALCULATIONS AND/OR CATALOG CUTS. ONCE THE PRECAST TRANSITION IS SET IN PLACE, THE LIFTING DEVICE POCKETS SHALL BE FILLED WITH A NON-SHRINK GROUT THAT MATCHES THE COLOR OF THE TRANSITION CONCRETE WHEN CURED AND THE FILLED POCKETS SHALL BE RUBBED WITH A CORUNDUM STONE TO BLEND OUT THE JOINTS.

CITY/TOWN
STREET/ROUTE # OR NAME

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |

| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
|---|---|
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

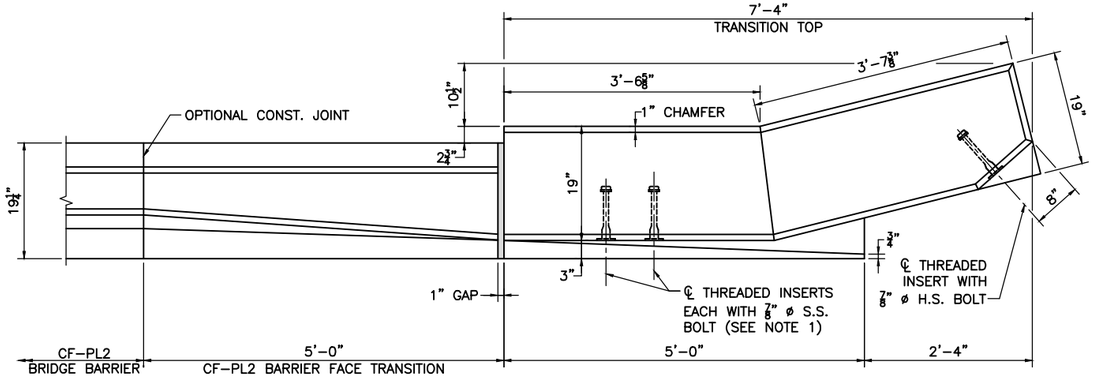
# TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR CP-PL2 BARRIER

SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)

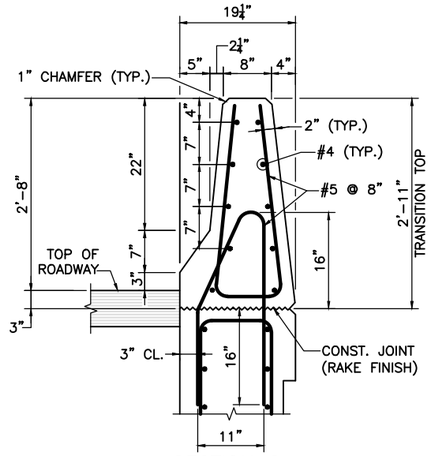
Date: June 2013

TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR CP-PL2 BARRIER.DWG 11-Mar-2014

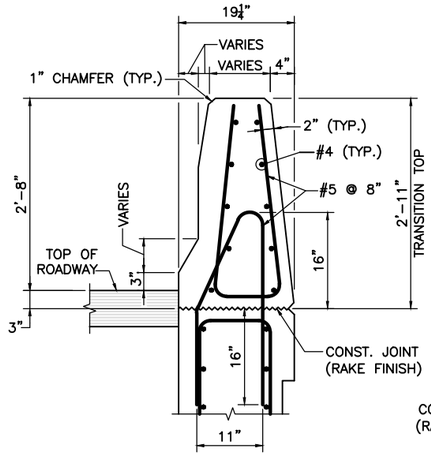
Xxxxxx Structural Submittal (Sh) DD-Month-YYYY



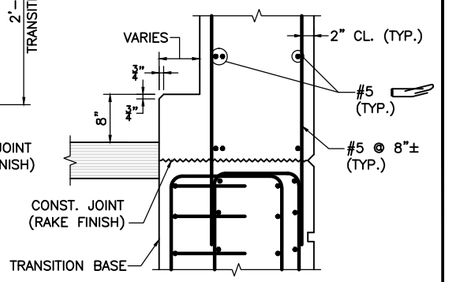

**PLAN**
SCALE: 1" = 1'-0"




**SECTION 2**
**TYPICAL CF-PL2 BRIDGE BARRIER**
SCALE: 1" = 1'-0"



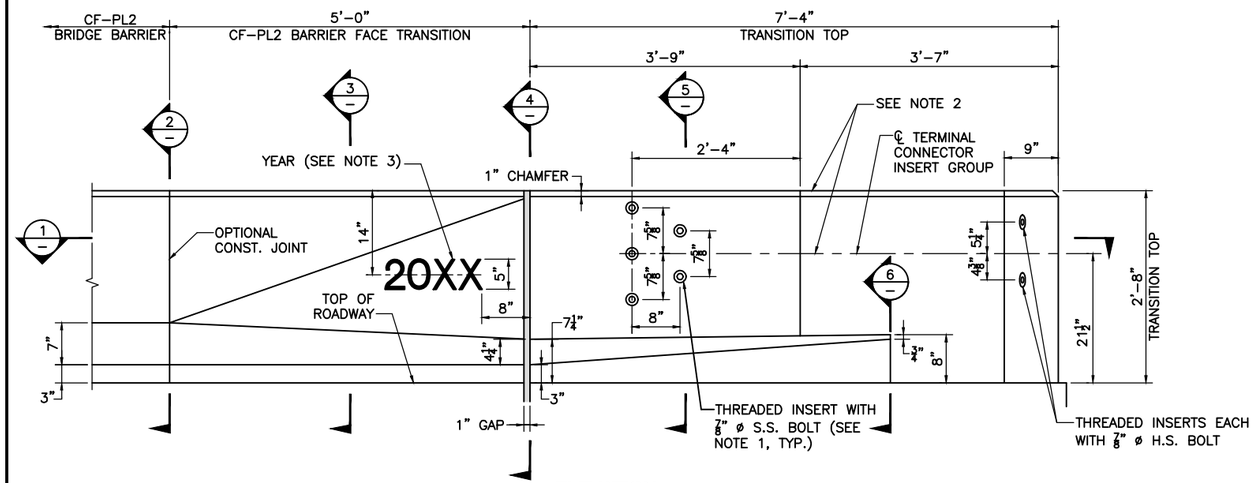

**SECTION 3**
SCALE: 1" = 1'-0"



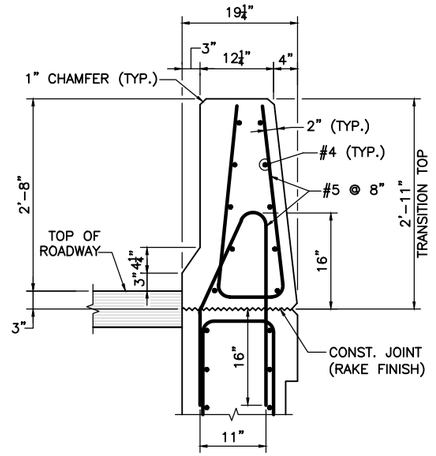

**SECTION 6**
SCALE: 1" = 1'-0"

**CITY/TOWN**
**STREET/ROUTE # OR NAME**

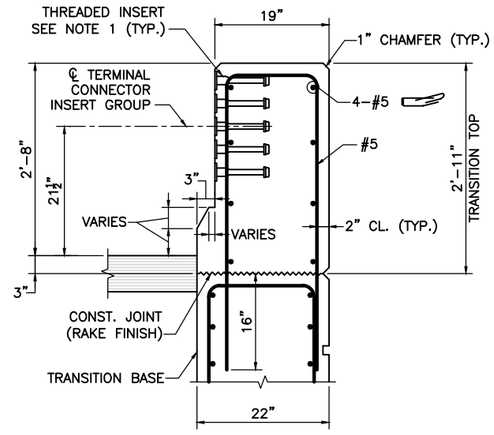
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |



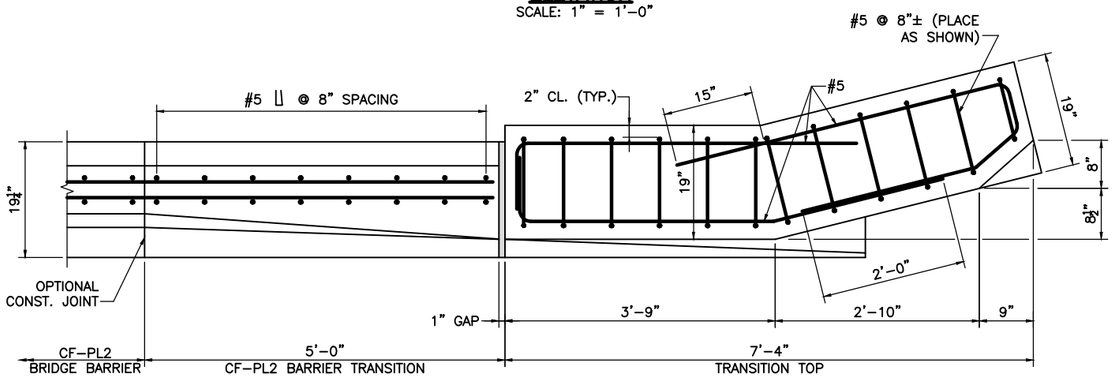

**ELEVATION**
SCALE: 1" = 1'-0"




**SECTION 4**
SCALE: 1" = 1'-0"




**SECTION 5**
SCALE: 1" = 1'-0"




**SECTION 1**
SCALE: 1" = 1'-0"

## NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" ø S.S. BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.
2. FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST.

   FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF THE BRIDGE BARRIERS SHALL FOLLOW THE APPROACH GRADE. THE HEIGHT OF THE TRANSITION TOP SHALL VARY PROVIDED THAT THE MINIMUM DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE MET. THE BOTTOM OF THE TRANSITION BASE SHALL BE SET LEVEL WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO FOLLOW THE APPROACH GRADE.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR ALL GUARDRAIL TRANSITIONS.
4. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI, ¾", 685 HP CEMENT CONCRETE.
5. LIFTING DEVICES (NOT SHOWN), INCLUDING THEIR NUMBER AND LOCATION, SHALL BE DESIGNED AND DETAILED BY THE PRECASTER. THEY SHALL BE GALVANIZED AND SHALL BE PLACED AND RECESSED IN POCKETS TO PROVIDE 1½" CLEAR COVER TO THE FACE OF THE TRANSITION CONCRETE. THESE DEVICES SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS ALONG WITH ALL SUPPORTING CALCULATIONS AND/OR CATALOG CUTS. ONCE THE PRECAST TRANSITION IS SET IN PLACE, THE LIFTING DEVICE POCKETS SHALL BE FILLED WITH A NON-SHRINK GROUT THAT MATCHES THE COLOR OF THE TRANSITION CONCRETE WHEN CURED AND THE FILLED POCKETS SHALL BE RUBBED WITH A CORUNDUM STONE TO BLEND OUT THE JOINTS.

| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

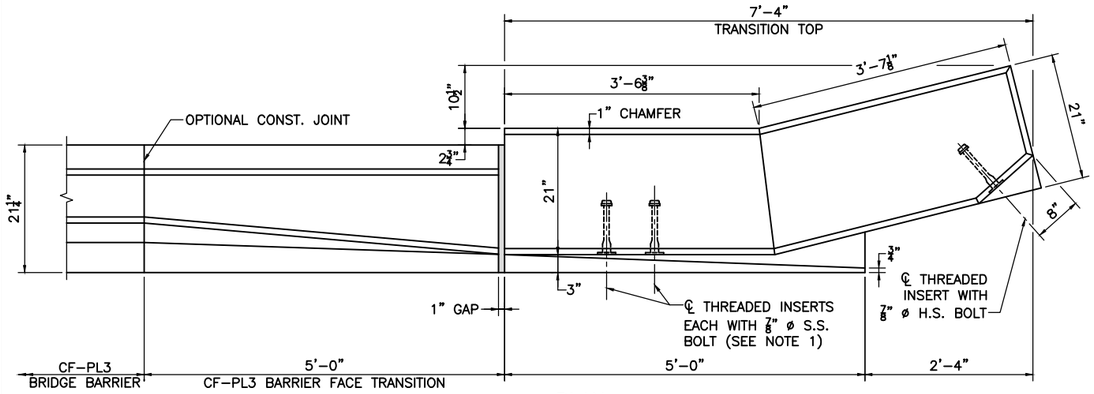
# TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR CF-PL2 BARRIER

**SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)**

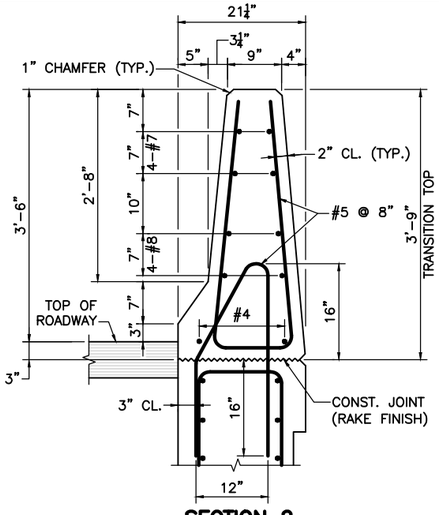
**Date: June 2013**

TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR CF-PL2 BARRIER.DWG 11-Mar-2014

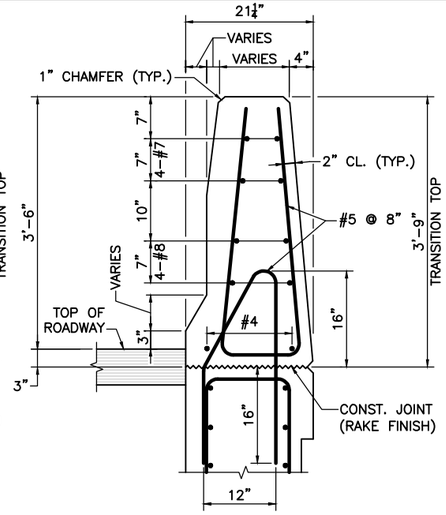
XXXXXX Structural Submittal (S#) DD-Month-YYYY




## PLAN
SCALE: 1" = 1'-0"



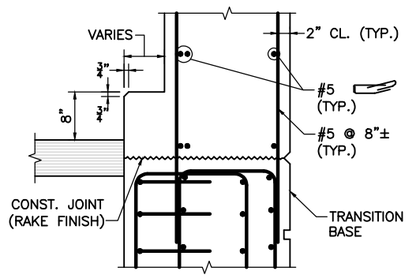

## SECTION 2
## TYPICAL CF-PL3 BRIDGE BARRIER
SCALE: 1" = 1'-0"



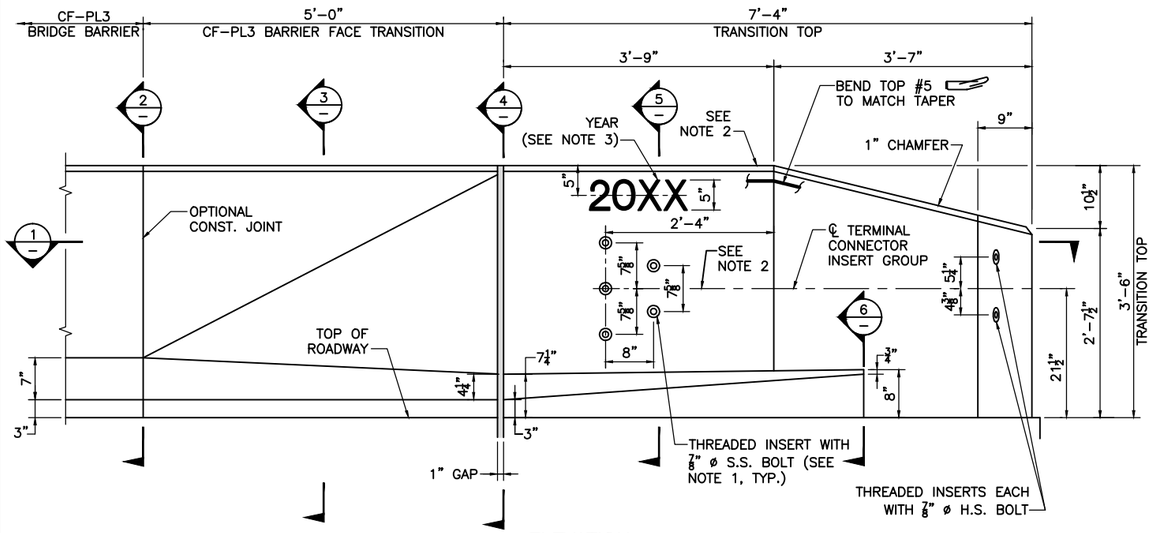

## SECTION 3
SCALE: 1" = 1'-0"

CITY/TOWN
STREET/ROUTE # OR NAME

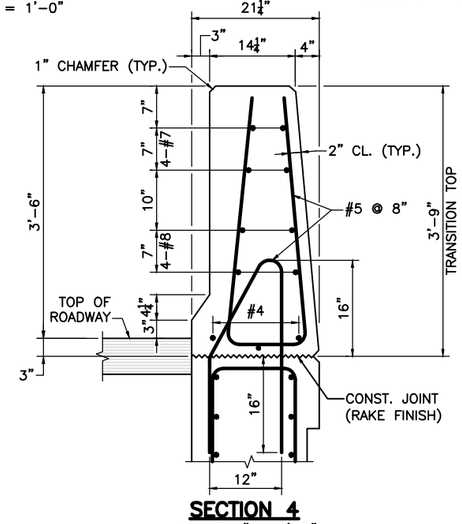
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |



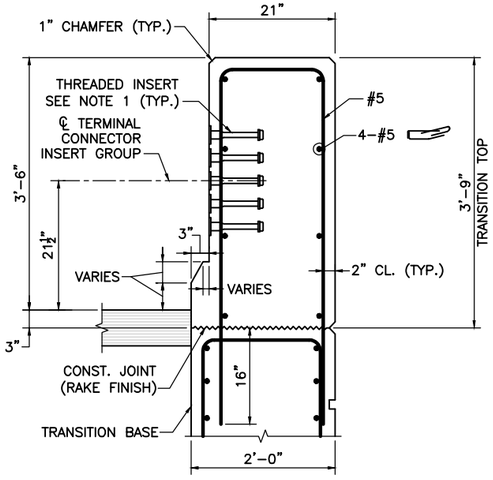

## SECTION 6
SCALE: 1" = 1'-0"



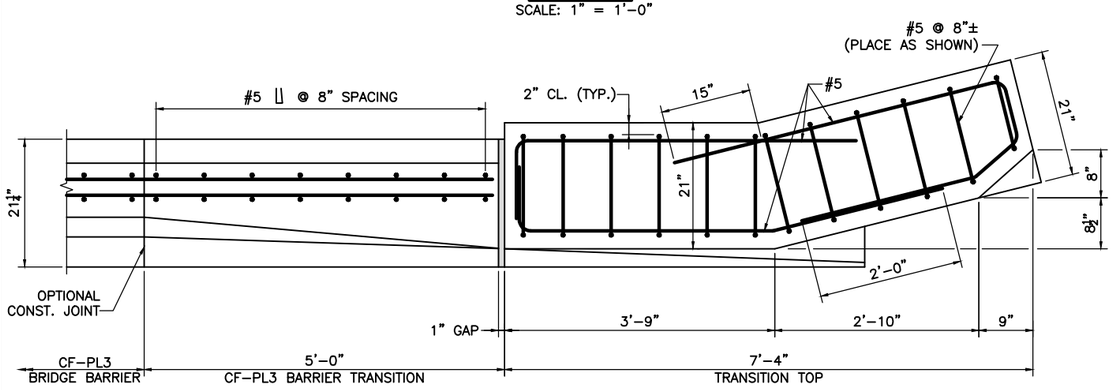

## ELEVATION
SCALE: 1" = 1'-0"




## SECTION 4
SCALE: 1" = 1'-0"




## SECTION 5
SCALE: 1" = 1'-0"




## SECTION 1
SCALE: 1" = 1'-0"

## NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" ø S.S. BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR ⅞" S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.
2. FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST.

   FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF THE BRIDGE BARRIERS SHALL FOLLOW THE APPROACH GRADE. THE HEIGHT OF THE TRANSITION TOP SHALL VARY PROVIDED THAT THE MINIMUM DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE MET. THE BOTTOM OF THE TRANSITION BASE SHALL BE SET LEVEL WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO FOLLOW THE APPROACH GRADE.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR ALL GUARDRAIL TRANSITIONS.
4. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI, ¾", 685 HP CEMENT CONCRETE.
5. LIFTING DEVICES (NOT SHOWN), INCLUDING THEIR NUMBER AND LOCATION, SHALL BE DESIGNED AND DETAILED BY THE PRECASTER. THEY SHALL BE GALVANIZED AND SHALL BE PLACED AND RECESSED IN POCKETS TO PROVIDE 1½" CLEAR COVER TO THE FACE OF THE TRANSITION CONCRETE. THESE DEVICES SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS ALONG WITH ALL SUPPORTING CALCULATIONS AND/OR CATALOG CUTS. ONCE THE PRECAST TRANSITION IS SET IN PLACE, THE LIFTING DEVICE POCKETS SHALL BE FILLED WITH A NON-SHRINK GROUT THAT MATCHES THE COLOR OF THE TRANSITION CONCRETE WHEN CURED AND THE FILLED POCKETS SHALL BE RUBBED WITH A CORUNDUM STONE TO BLEND OUT THE JOINTS.

| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

# TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR CF-PL3 BARRIER

SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)

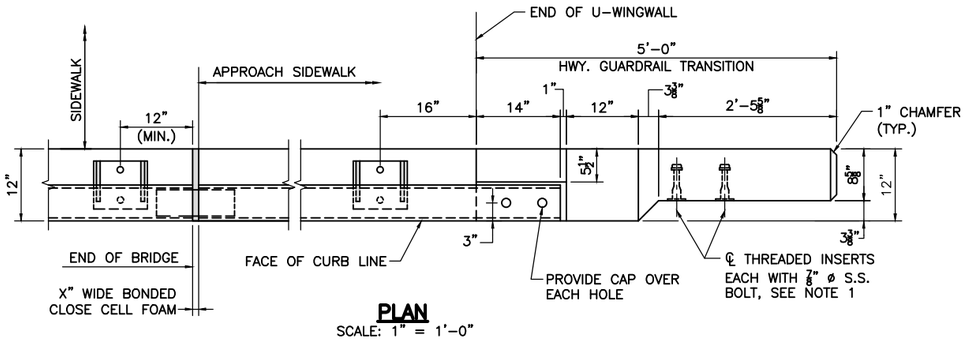
Date: June 2013

TOP OF PRECAST HIGHWAY GUARDRAIL TRANSITION FOR CF-PL3 BARRIER.DWG 11-Mar-2014

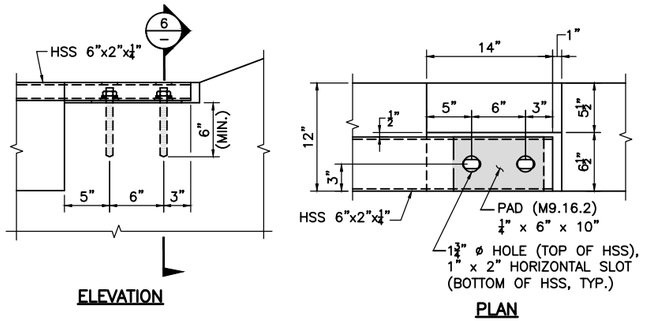
Xxxxx Structural Submittal (S#) DD-Month-YYYY

CITY/TOWN
STREET/ROUTE # OR NAME

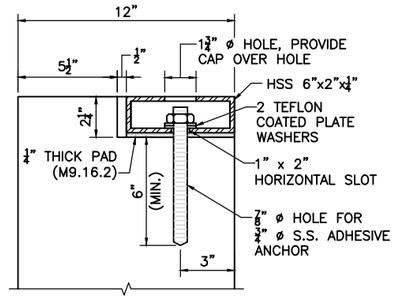
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |



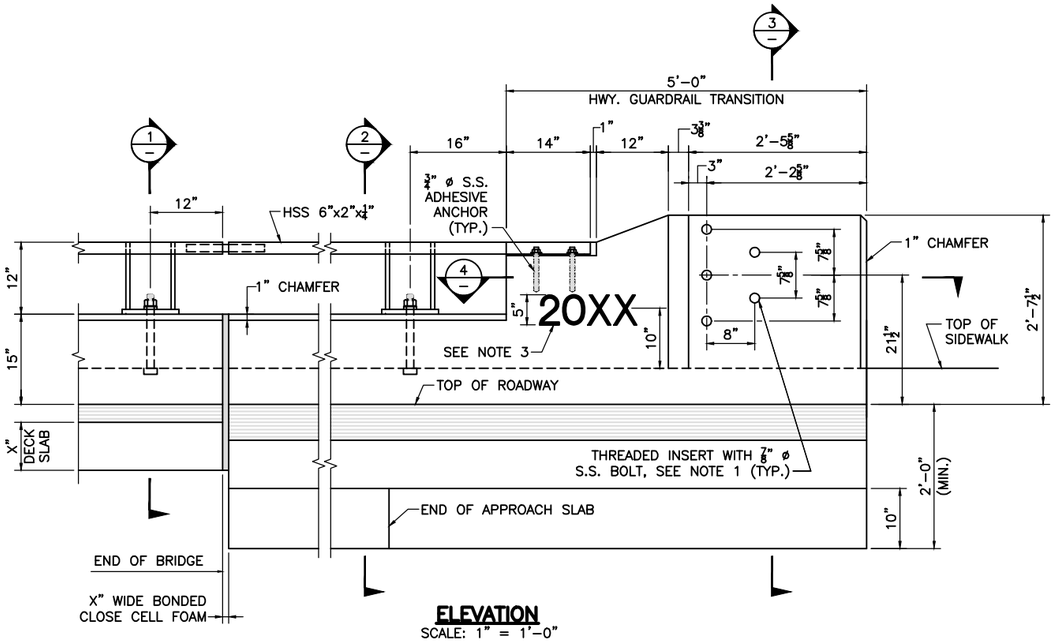

**PLAN**
SCALE: 1" = 1'-0"



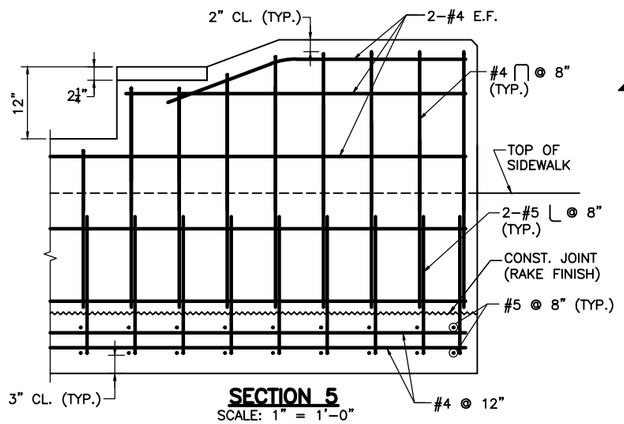

**RAIL ATTACHMENT**
SCALE: 1½" = 1'-0"



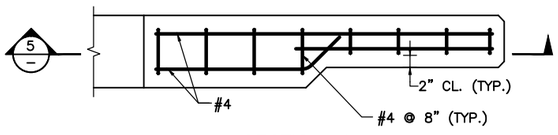

**SECTION 6**
SCALE: 3" = 1'-0"



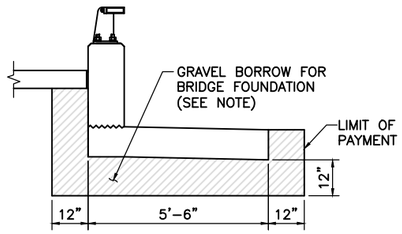

**ELEVATION**
SCALE: 1" = 1'-0"




**SECTION 5**
SCALE: 1" = 1'-0"

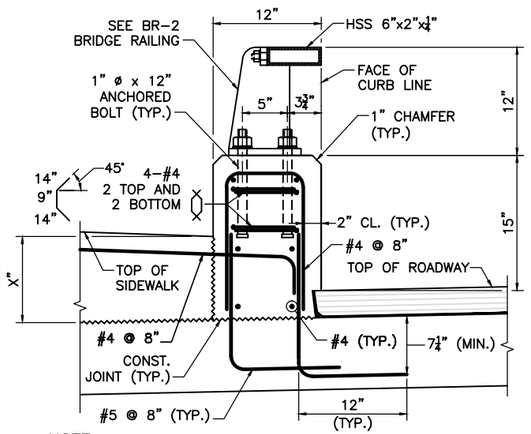



**SECTION 4**
SCALE: 1" = 1'-0"



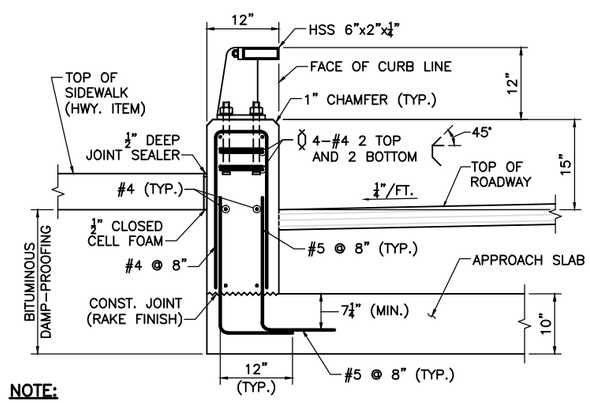

**NOTE:**
GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF THE BOTTOM OF THE SLAB.

**BR-2 RAILING BACKFILL**
SCALE: ½" = 1'-0"



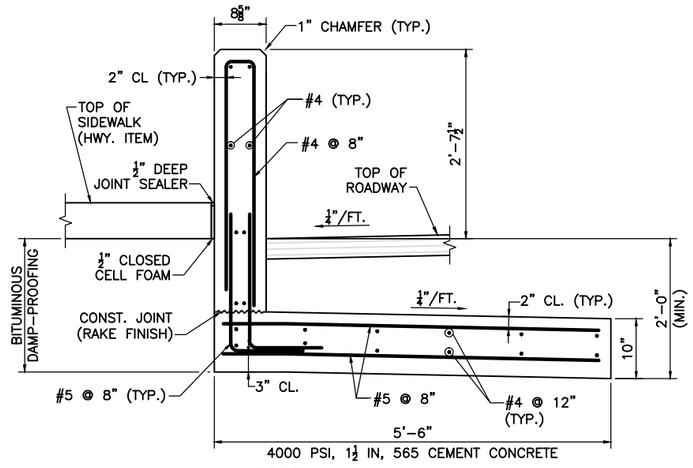

**NOTE:**
SIDEWALK AND DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

**SECTION 1**
SCALE: 1½" = 1'-0"




**NOTE:**
APPROACH SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

**SECTION 2**
SCALE: 1" = 1'-0"




**SECTION 3**
SCALE: 1" = 1'-0"

**NOTES:**

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" ø S.S. BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR ⅞" S.S. BOLTS SHALL BE CAST-IN-PLACE AND GALVANIZED.
2. ALL CONCRETE FOR THE BR-2 RAILING AND HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI, ¾ IN, 685 HP CEMENT CONCRETE.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST HIGHWAY GUARDRAIL TRANSITION IS CAST.

| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

# HIGHWAY GUARDRAIL TRANSITION FOR BR-2 RAILING

**SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)**

**Date: June 2013**

HIGHWAY GUARDRAIL TRANSITION - BR-2 RAILING.DWG 11-Mar-2014

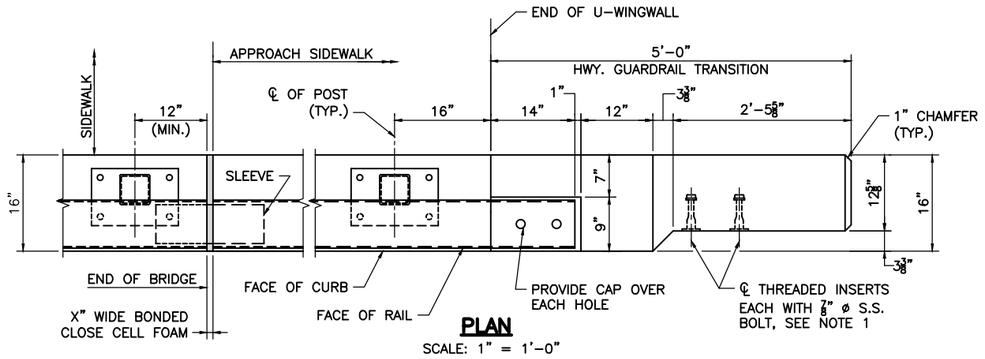
Xxxxxx Structural Submittal (SH) DD-Month-YYYY

CITY/TOWN
STREET/ROUTE # OR NAME

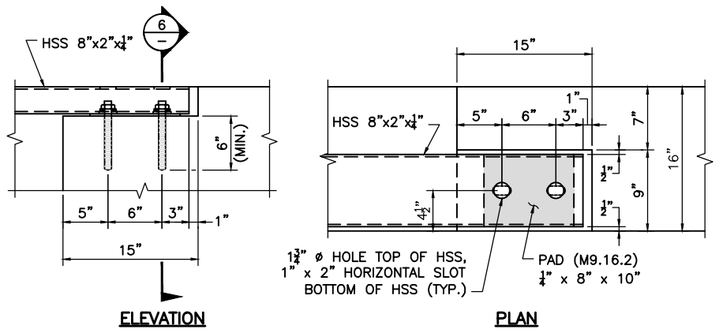
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | X | X |
| PROJECT FILE NO. XXXXXX | | | |

11-Mar-2014

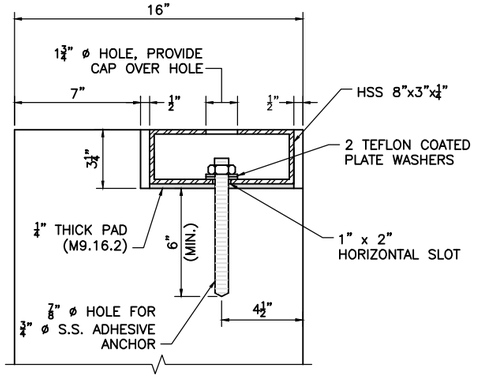
HIGHWAY GUARDRAIL TRANSITION - CM-TL3 RAILING.DWG



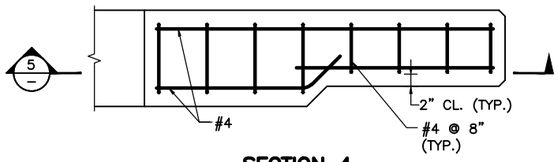

**PLAN**
SCALE: 1" = 1'-0"



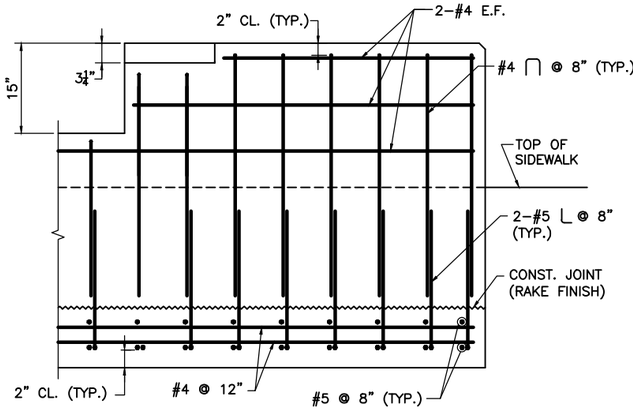

**RAIL ATTACHMENT**
SCALE: 1½" = 1'-0"



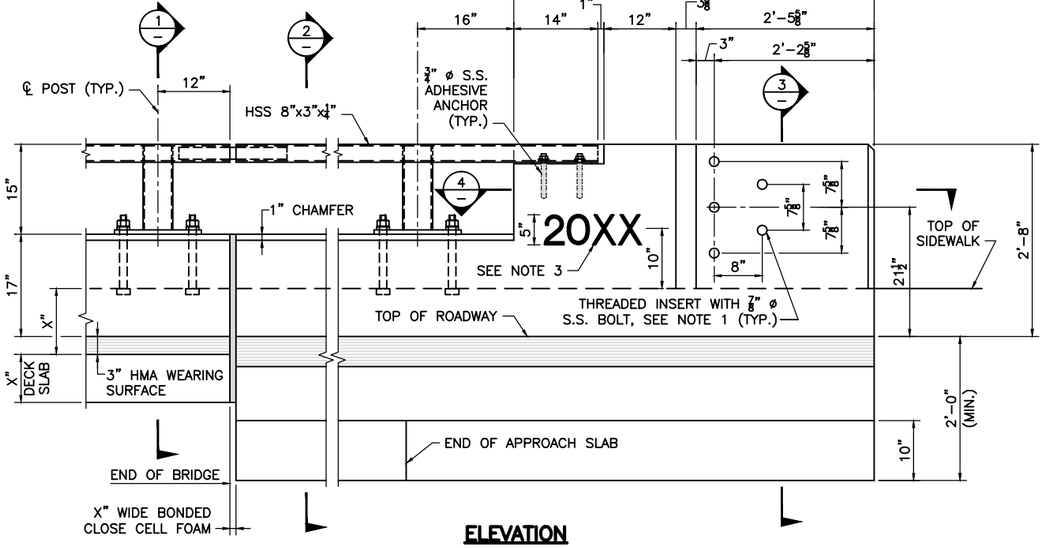

**SECTION 6**
SCALE: 3" = 1'-0"



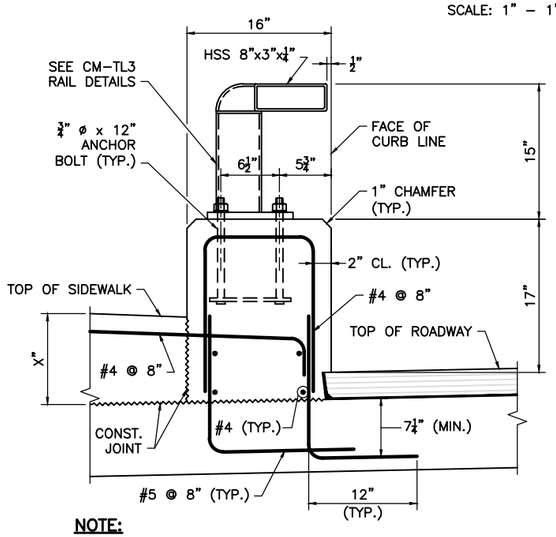

**SECTION 4**
SCALE: 1" = 1'-0"




**SECTION 5**
SCALE: 1" = 1'-0"

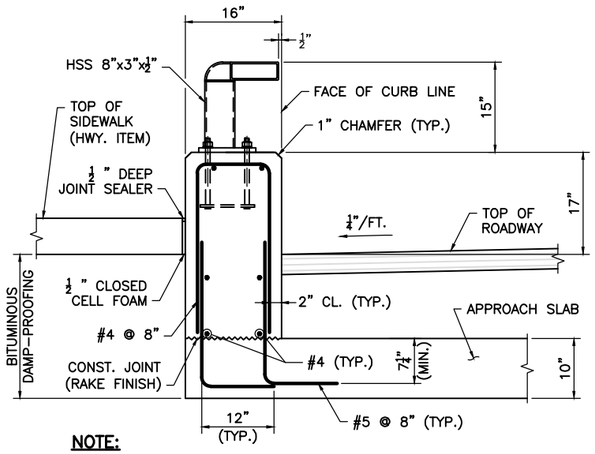



**ELEVATION**
SCALE: 1" – 1'-0"



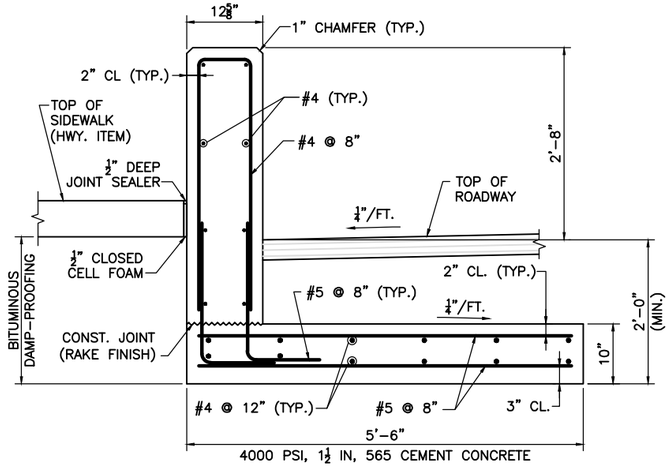

**NOTE:**
SIDEWALK AND DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

**SECTION 1**
SCALE: 1½" = 1'-0"

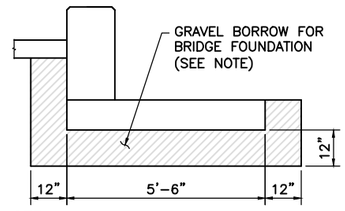



**NOTE:**
APPROACH SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

**SECTION 2**
SCALE: 1" – 1'-0"




**SECTION 3**
SCALE: 1" = 1'-0"




**NOTE:**
GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF THE BOTTOM OF THE SLAB.

**MC-TL3 RAILING BACKFILL**
SCALE: ½" = 1'-0"

## NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER ⅞" ø S.S. BOLT. S.S. BOLTS SHALL BE ⅞" ø x 1½" LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR ⅞" S.S. BOLTS SHALL BE CAST-IN-PLACE AND GALVANIZED.
2. ALL CONCRETE FOR THE CM-TL3 RAILING AND HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI, ¾ IN, 685 HP CEMENT CONCRETE.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST HIGHWAY GUARDRAIL TRANSITION IS CAST.

| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
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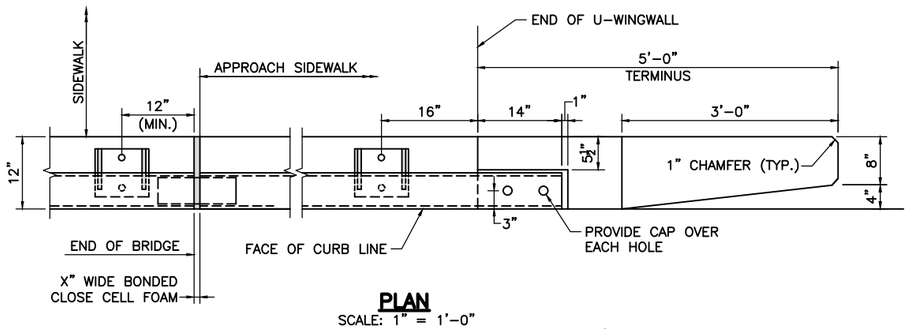
# HIGHWAY GUARDRAIL TRANSITION FOR CM-TL3 RAILING

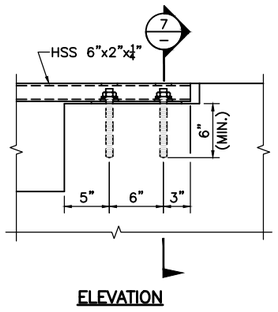
SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)

Date: June 2013

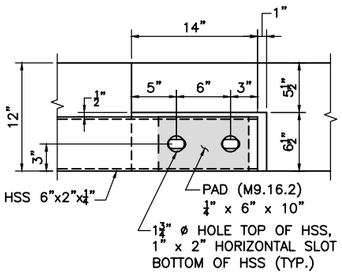
XXXXXX Structural Submittal (S#) DD-Month-YYYY




**PLAN**
SCALE: 1" = 1'-0"

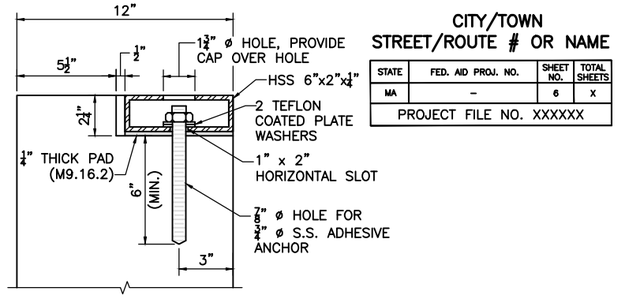



**ELEVATION**




**PLAN**

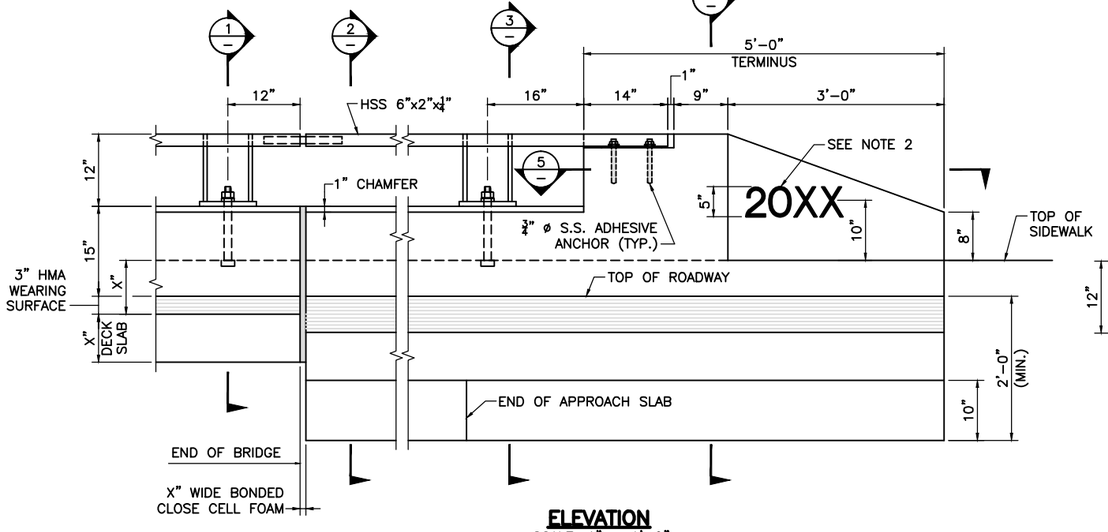
**RAIL ATTACHMENT**
SCALE: 1½" = 1'-0"



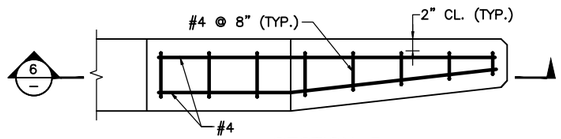

**SECTION 7**
SCALE: 3" = 1'-0"

CITY/TOWN
STREET/ROUTE # OR NAME

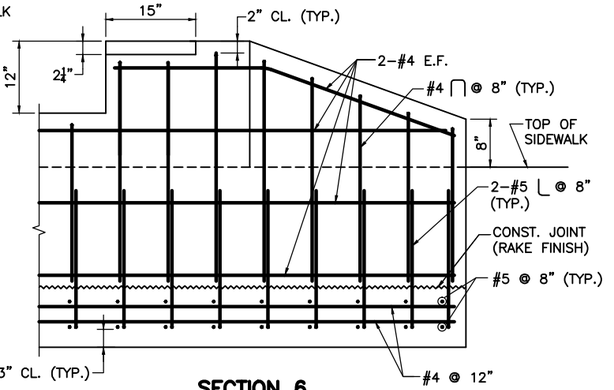
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | 6 | X |
| PROJECT FILE NO. XXXXXX | | | |



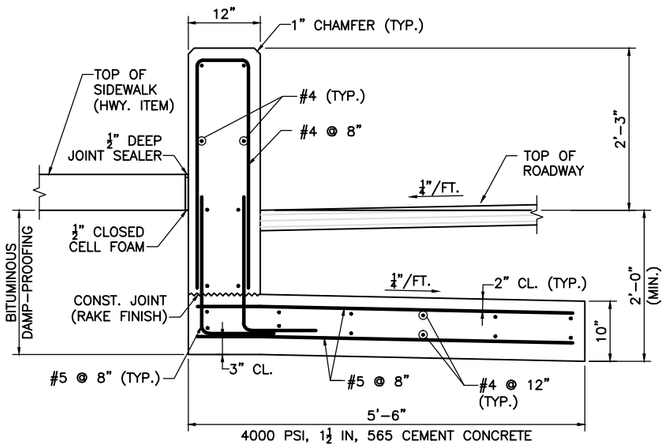

**ELEVATION**
SCALE: 1" = 1'-0"



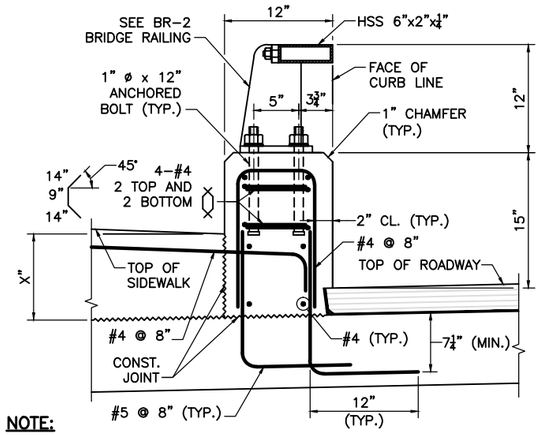

**SECTION 5**
SCALE: 1" = 1'-0"




**SECTION 6**
SCALE: 1" = 1'-0"

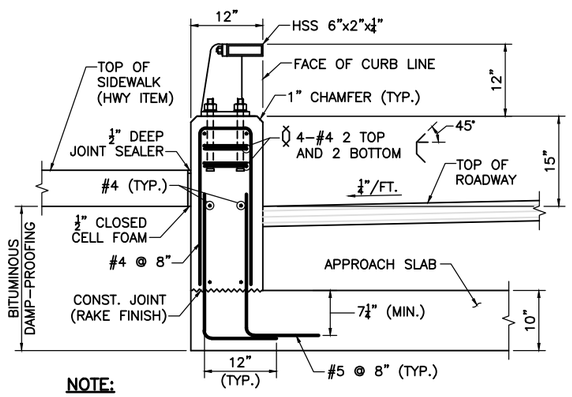



**SECTION 4**
SCALE: 1" = 1'-0"



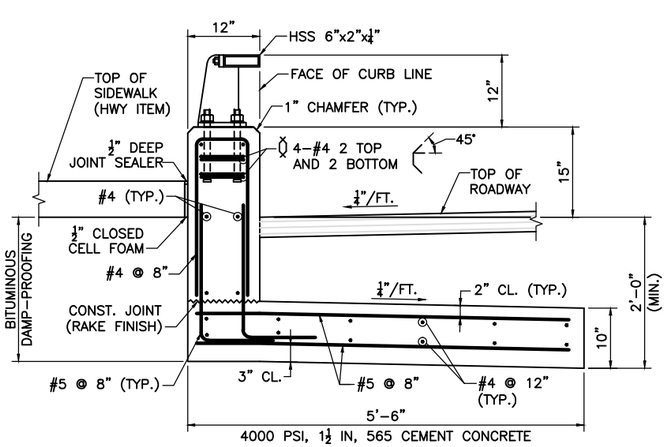

**NOTE:**
SIDEWALK AND DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

**SECTION 1**
SCALE: 1½" = 1'-0"

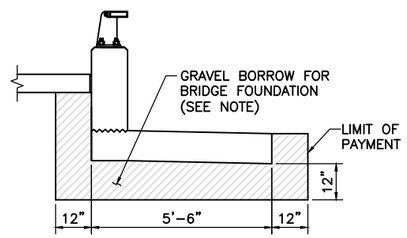



**NOTE:**
APPROACH SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

**SECTION 2**
SCALE: 1" = 1'-0"




**SECTION 3**
SCALE: 1" = 1'-0"




**NOTE:**
GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF THE BOTTOM OF THE SLAB.

**BR-2 RAILING BACKFILL**
SCALE: ½" = 1'-0"

**NOTES:**

1. ALL CONCRETE FOR THE BR-2 RAIL AND TERMINUS SHALL BE 5000 PSI, ¾ IN, 685 HP CEMENT CONCRETE.
2. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST TERMINUS IS CAST.

| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

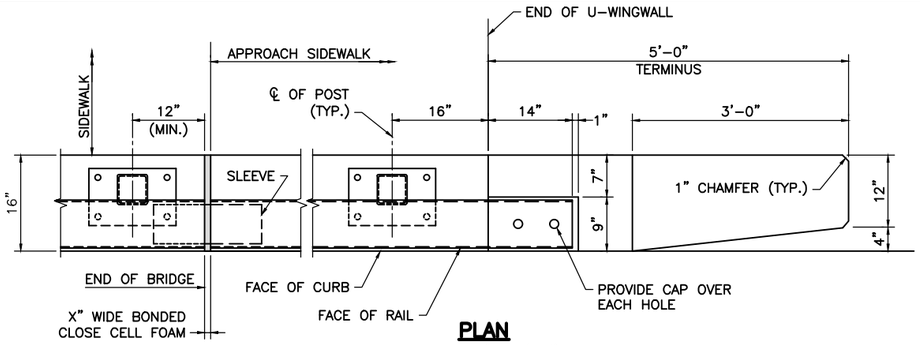
# TERMINUS FOR BR-2 BRIDGE RAILING

**SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)**

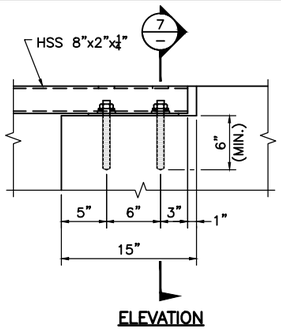
**Date: June 2013**

TERMINUS - BR-2 RAILING.DWG 11-Mar-2014

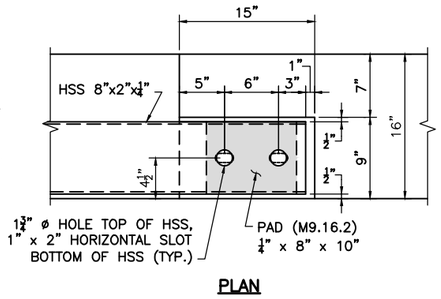
XXXXXX Structural Submittal (S#) DD-Month-YYYY




## PLAN
SCALE: 1" = 1'-0"

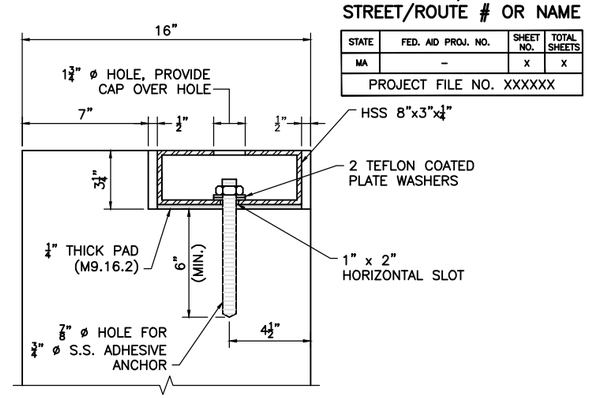



## ELEVATION




## PLAN

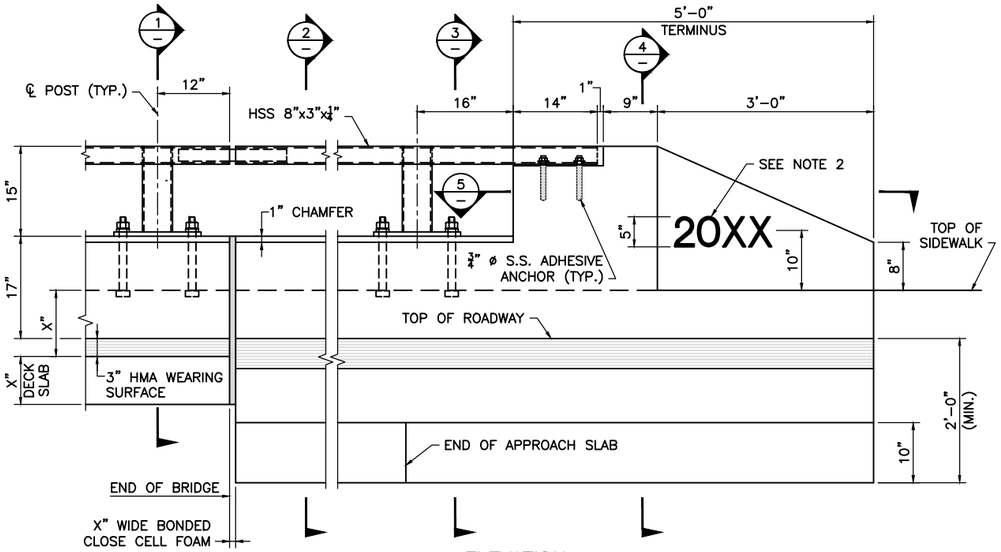
## RAIL ATTACHMENT
SCALE: 1½" = 1'-0"



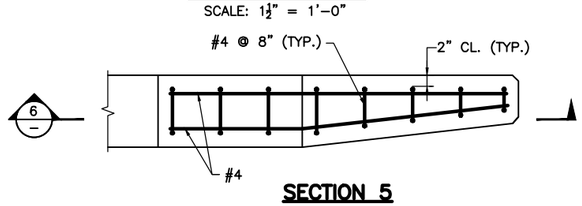

## SECTION 7
SCALE: 3" = 1'-0"

CITY/TOWN
STREET/ROUTE # OR NAME

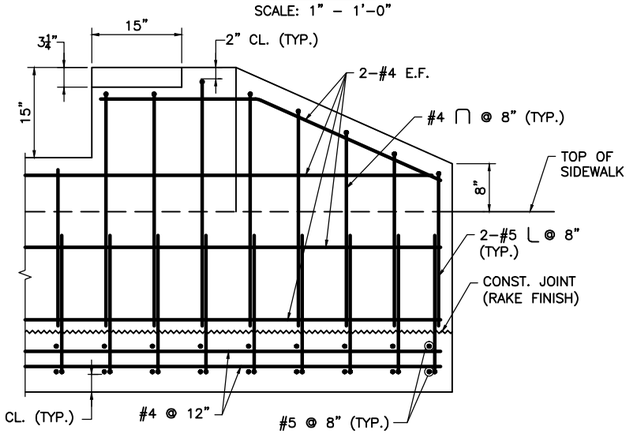
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | – | X | X |
| PROJECT FILE NO. XXXXXX | | | |



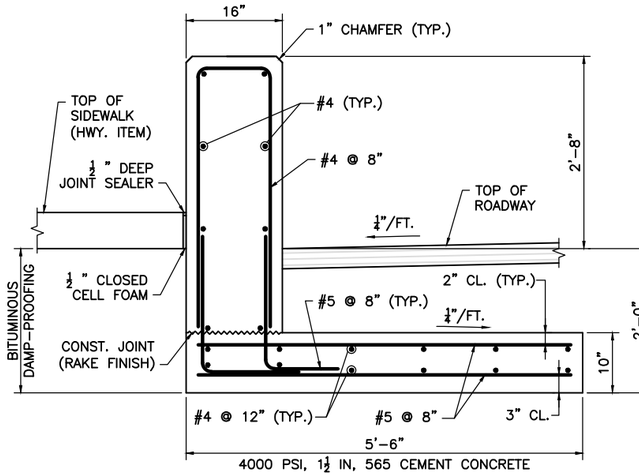

## ELEVATION
SCALE: 1" = 1'-0"



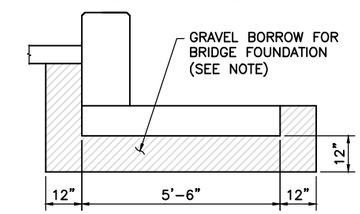

## SECTION 5
SCALE: 1" = 1'-0"




## SECTION 6
SCALE: 1" = 1'-0"



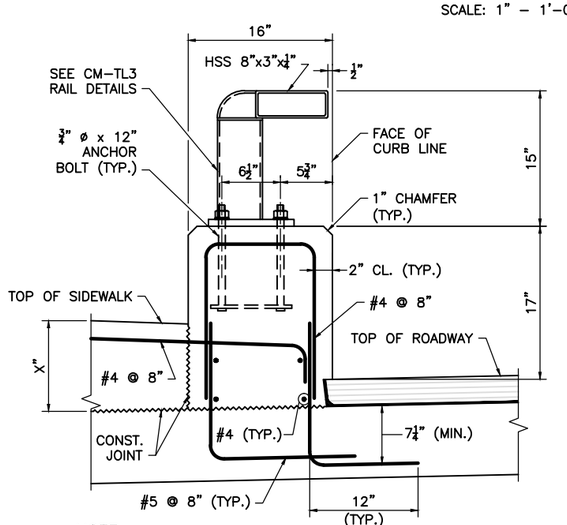

## SECTION 4
SCALE: 1" = 1'-0"




**NOTE:**
GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF THE BOTTOM OF THE SLAB.

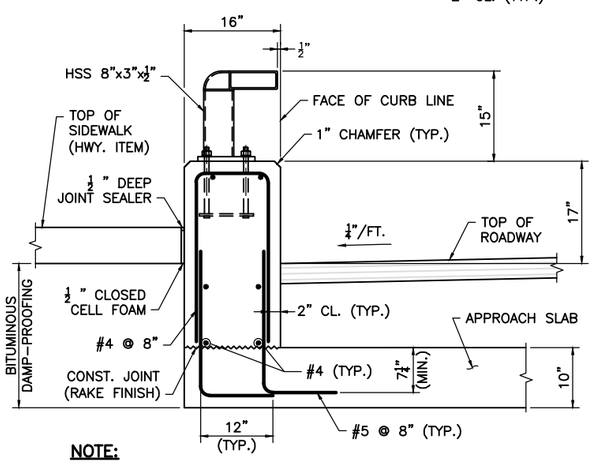
## MC-TL3 RAILING BACKFILL
SCALE: ½" = 1'-0"

**NOTES:**
1. ALL CONCRETE FOR THE MC-TL3 RAILING AND TERMINUS SHALL BE 5000 PSI, ¾ IN, 685 HP CEMENT CONCRETE.
2. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST TERMINUS IS CAST.



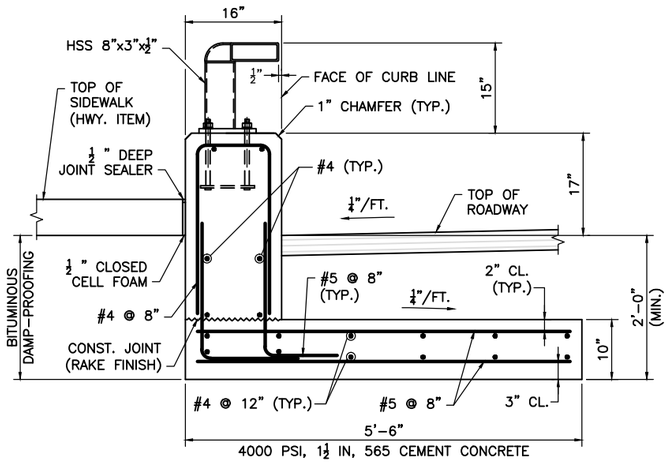

**NOTE:**
SIDEWALK AND DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

## SECTION 1
SCALE: 1½" = 1'-0"




**NOTE:**
APPROACH SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

## SECTION 2
SCALE: 1" = 1'-0"




## SECTION 3
SCALE: 1" = 1'-0"

# TERMINUS FOR CM-TL3 BRIDGE RAILING

| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
|---|---|
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

SHEET XX OF XX SHEETS BRIDGE NO. X-XX-XXX (XXX)

Date: June 2013

TERMINUS - CM-TL3 BRIDGE RAILING.DWG 11-Mar-2014

Xxxxxx Structural Submittal (S#) DD-Month-YYYY